

6  
Mecklenburg Co.

60131993

# NORTH MECKLENBURG LANDFILL



December 20, 1993

Mr. James C. Coffey  
Supervisor, Permitting Branch  
Solid Waste Management Division  
N.C.D.E.H.N.R.  
Post Office Box 27687  
Raleigh, NC 27611-7687

Re: North Mecklenburg Landfill, Inc. and problem with adjacent new well

Dear Mr. Coffey,

As requested by your office, I am enclosing specific details and a certified survey of Mr. Council's well location. The facts are generally in chronological order starting with the cleanup of an illegal dump site at the front of this property in 1986.

1. The area of this site adjacent to Holbrooks Road was an unapproved illegal dump in 1986.
2. The Environmental Protection Department had the site cleaned up and closed.
3. In 1987 the process of applying and obtaining a demolition landfill permit was consummated. The non-permitted dump area was excluded from the permit.
4. The landfill began permitted operations in late 1988. This permit included both tracts of land totaling 70.97 acres.
5. My initial contact with the Solid Waste Section to permit the landfill was in September 1991. I was told I would have to maintain a 100 ft. buffer to the nearest well, and my application was submitted under the 100 ft. well buffer requirement in September 1991.
6. The Policy Memo #16, page 3, paragraph c, states "buffer requirements - 250 ft. between private dwellings, wells, and disposal areas." This memo is dated August 1, 1991. In 1992, during a site inspection, I was told the buffer requirement had changed to 300 ft.
7. All conversations were for a 300 ft. buffer until my meeting with Mr. Cayton in November 1993 in Raleigh. This was the first time I heard of the 500 ft. buffer requirement. This change is after we received "Site Plan approval in June 24, 1993." We currently have a 300 ft. buffer to this recently drilled water well for Mr. Council's house. See enclosed "Map of Well Location & Pit Location" dated October 16, 1993 as surveyed by Richard B. Brooks, NC RLS.
8. The C & D Landfill Permit was issued June 24, 1993.
9. The Landfill berm construction began on July 1, 1993.

**Specifics about Mr. Council's new well:**

1. The adjacent property owner, Mr. Bob Council, drilled his water well in the first two weeks of August; the placard shows August 19, 1993. (See Meck. Co. Solid & Hazardous Waste Section Activity Report dated December 8, 1993 attached.)
2. Prior to his drilling the well, I met with Mr. Council on his property and called to his attention the fact that my property was permitted for a landfill and suggested that he set his well as far as possible from my property.
3. Mr. John Gibson, MCDEP, met with Environmental Health in early 1993 and cautioned them that Mr. Council's house was near the landfill and suggested a large buffer area. Apparently Environmental Health erroneously permitted the well at it's present location. (See attached proposed plot plan from county.)
4. After I discovered the well location, I told Mr. Council I would finance relocating the well away from the landfill. He refused. I also offered to purchase the Council property, pay for any improvements made, and reimburse the interest incurred for the property and improvements. Mr. Council demanded a payment of \$10,000 per acre for property plus improvements and interest for land that cost him \$2,200 per acre. He has some 40 acres of land at this site!
5. Mr. Council was warned, prior to drilling the well, through his Contractor by Edward Mullis of Giles Mullis Well Drillers, that they should contact the Health Department to make sure the well site was a good location. (See MCDEP Activity Report dated December 8, 1993.)

New wells drilled around the 42.77 acres that received site plan approval in June 1993 should not dictate where I can operate my landfill. Mr. Council's well was drilled in August 1993 and should not be a factor in the ongoing operation and expansions of this landfill. Mr. Council's well was drilled after he was warned that the well was too close to the landfill by the MCDEP, the well driller, and myself. Mr. Council has some 40 acres of land at this site and could have easily picked a site over 500 ft. from the disposal area.

There also should be no future problem with wells in this area because the County Deed Books show North Mecklenburg Landfill, Inc. as a landfill since 1988 and any title review of adjacent property, like Mr. Council's, should reveal this.

Also note that the hydro-geological assessment will be completed in late January 1994. Please do not hesitate to contact me if you have any questions. I look forward to your comments on this matter.

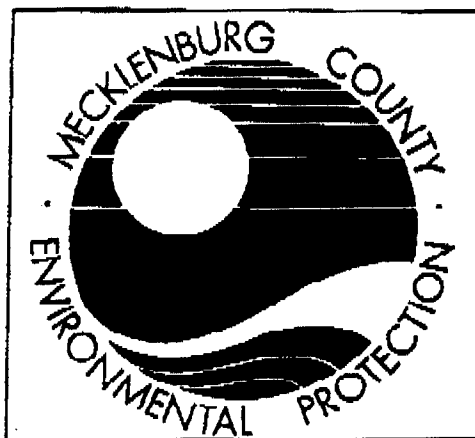
Sincerely,

Larry A. Griffin, Sr.  
President

  
Enclosure.

cc: Julian Foscoe, DEHNR  
John Gibson, MCDEP  
Rick Doby, DEHNR  
Ron Gilkerson, Geologist  
Frank Hicks, Engineer  
Janice D. McHargue, Engineer

15300 Holbrooks Road • Huntersville, NC 28078 • 704/875-3367

**TELECOPIER TRANSMITTAL COVER SHEET**

**TO:** Mr. Jim Coffey  
**TELECOPIER NUMBER:** 919-733-4810  
**FROM:** John Gibson  
**TELECOPIER NUMBER:** (704) 336-4391  
**DATE:** 12/1/93  
**PAGES TRANSMITTED INCLUDING COVER SHEET:** 4  
**MESSAGE:**

Page #1 dated 3/16/93 is when the individual gave notice of intent to install well & septic system.

Page #2 dated 10/11/93 is date certif was issued for septic system. Well would be installed between these dates.

The only sure way is to read the placard on the well casing and it may not be there. To determine when the well was installed.

P. 02/04

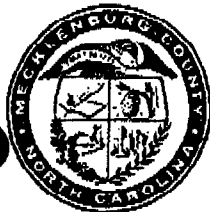
P. 01

DEC-01-93 WED 15:58

M# DP

OK

```
*****  
*                                                                 * P.01  
*          TRANSACTION REPORT                                     *  
*                                                                 *  
*                                                                 * DEC-01-93 WED 15:58  
*                                                                 *  
* DATE   START RECEIVER    TX TIME PAGES TYPE      NOTE      M# DP  
*-----|-----|-----|-----|-----|-----|-----|-----|  
* DEC-01 15:56 919197334810 1' 47"     3 SEND        OK  
*  
*****
```

**PROPOSED PLOT PLAN**

HEALTH DEPARTMENT  
ENVIRONMENTAL HEALTH DIVISION  
700 NORTH TRYON STREET  
CHARLOTTE, NC 28202  
PHONE (704) 336-5102

FILE:

4799A

TC:

019-171-1410

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries, proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.

1500 ST

6 lines x 90' long x 3' wide x 12' stone

535 TLE

Keep septic lines on contour of land

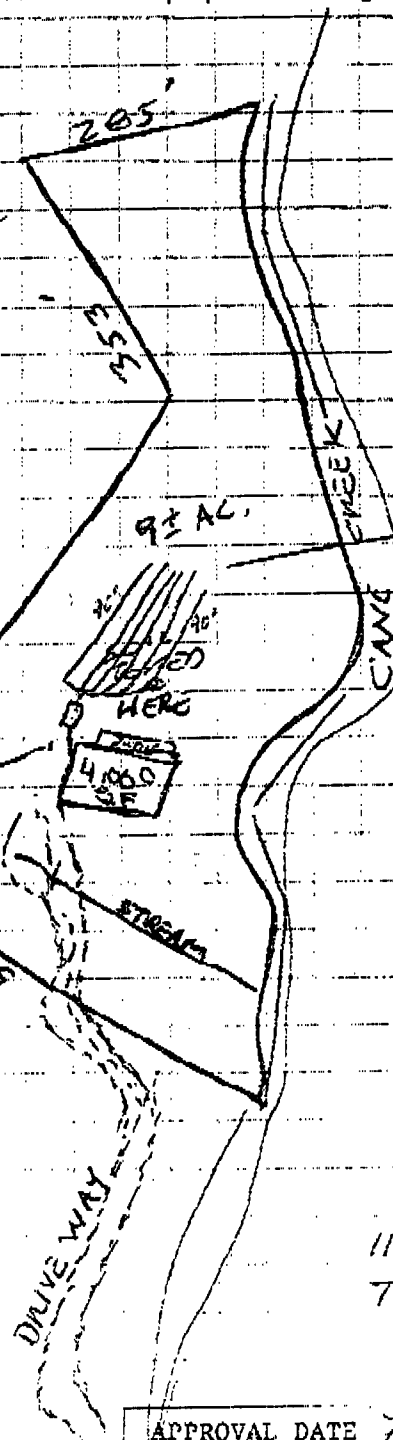
Keep proposed well 7.50' from septic system

Keep well 7.25' from house foundation

Keep plumbing as high as possible

JLA TLE

3/16/93



Keep septic lines on contour of land  
Keep plumbing as high as possible

11743 TRAILS END RD  
TRACT #1

APPROVAL DATE

JLA 3/16/93

# CERTIFICATE OF COMPLETION/OPERATION PERMIT



HEALTH DEPARTMENT  
ENVIRONMENTAL HEALTH DIVISION  
1200 BLYTHE BOULEVARD  
CHARLOTTE, NC 28203  
PHONE (704) 376-4603

FILE: 4799ADATE: 10/11/93TO: 119 171 14 PD☐ I☐ CRT

SERIAL

No

15356

#2

Name of Owner

Robert Council

Juris: \_\_\_\_\_

Address of Property

11743 Trails End Lane

## Inspection Data:

Tank Material

PCC

Total Length of Drainfield

535'

Number of Lines

5 @ 107'

Cover Depth

10'-18"

Water Supply Source

Well

Distance to Water Source

750'

Excavation Inspected

10/11/93

Tank(s) Inspected

10/11/93

Wash Line Inspected

High Water Alarm Inspected

-

Design:

1993, 1500ST, CON, 10/10 SFT, 12" ST. W. E.CT#

CTR#

Little

The undersigned has inspected the Septic Tank System described above, and certifies it has been

☒ installed or constructed☐ altered or repaired☐ in accordance with the permit issued☒ as detailed in the plot above

and meets the provisions of 10 NCAC 10A .1900, "Laws And Rules For Sanitary Sewage Collection, Treatment, And Disposal" in effect on the date of issuance of the permit. The issuance of this

☒ Certificate of Completion☐ Operation Permit

does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 10 NCAC 10A .1900 in addition to those listed below under "COMMENTS." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

COMMENTS:

Septic system designed for 4 bedroom house.7-10-93Ther. Walter M.

Environmentalist

**H BUSINESS CONNECTION**

119 WEST INNES STREET, Salisbury, NC 28144

704/633-4610 / 704-633-4021 (fax)

**E**

your other office

**FAX TRANSMISSION**Date 12 / 1 / 93  
Number of Pages including this sheet 1

To:

Jim Coffee

Company

NCDEHNR <sup>Solid</sup> Waste

FAX #

(919) 733-4810

FROM:

Name

Rick Dobe, Sr.

Company

NCDEHNR

Contact #

## REMARKS:

Larry Griffin LFWell Locations w/ Trench



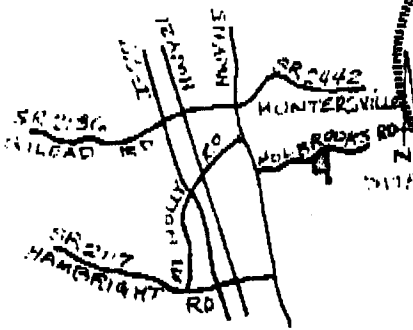
THIS IS TO CERTIFY THAT ON THE 16<sup>TH</sup> DAY OF OCTOBER 1993, I SURVEYED THE PROPERTY SHOWN ON THIS PLAT, AND THAT THE PROPERTY LINES, WALLS AND BUILDINGS ARE AS SHOWN HEREON: THAT THE BUILDINGS LOCATED ON SAID LOT DO NOT ENCR OACH OR PROJECT ON ADJACENT STREETS OR PROPERTY: AND THAT NO ADJACENT BUILDINGS OR WALLS ENCR OACH OR PROJECT ON SAID PREMISES



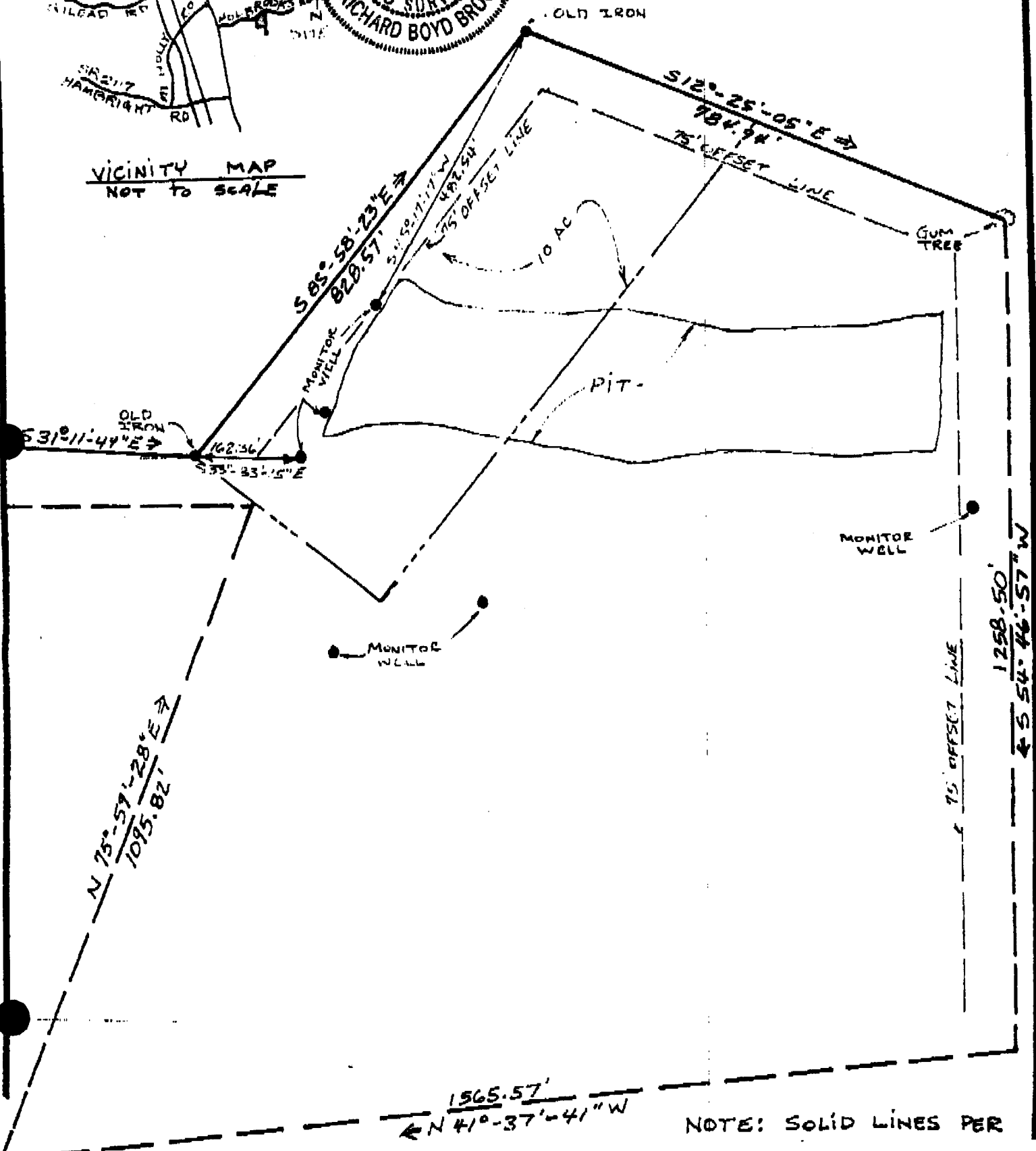
**RICHARD BOYD BROOKS**

1200 JENKINS DR  
CHARLOTTE, NC 28212  
704-568-1719

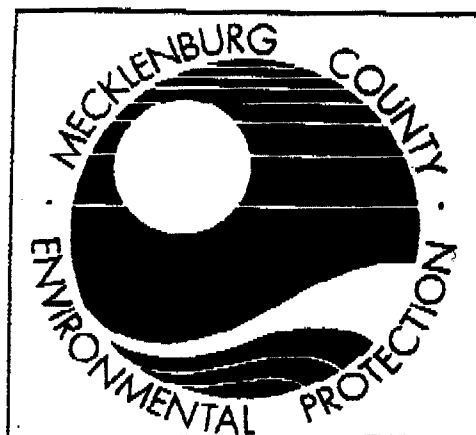
SIGNED [Signature]  
N.C. REGISTERED SURVEYOR L2689



VICINITY MAP  
NOT TO SCALE



NOTE: SOLID LINES PER

**TELECOPIER TRANSMITTAL COVER SHEET**

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HEALTH DEPARTMENT  
ENVIRONMENTAL HEALTH DIVISION  
700 NORTH TRYON STREET  
CHARLOTTE, NC 28202  
PHONE (704) 336-5102

FILE:

4799A

TC:

019-171-1470

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries, proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.

1500 ST

6 1/2" x 90' long x 3' wide x 12' stone

535 TLF

Keep septic lines on contour of land

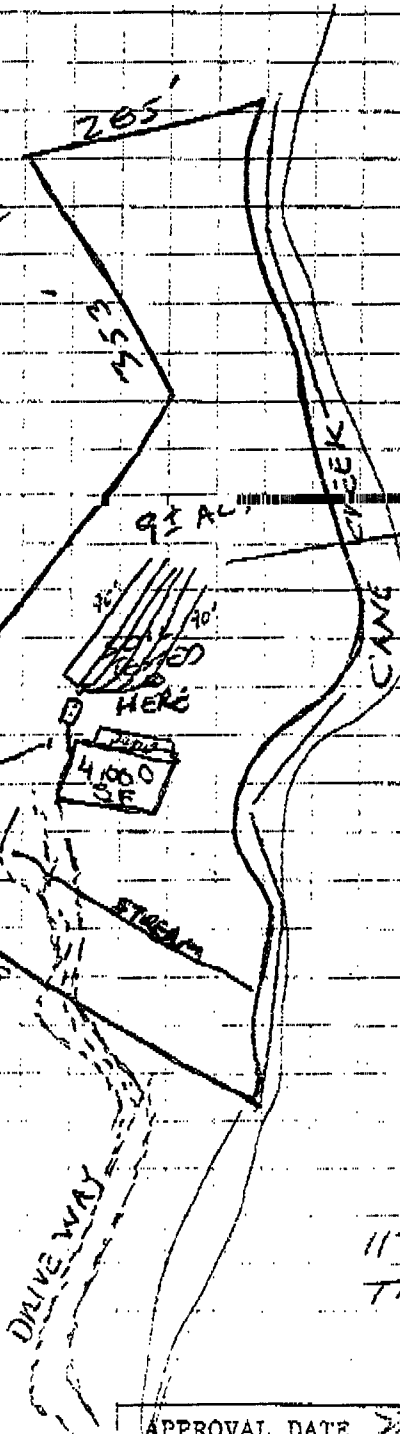
Keep proposed well 7.50' from septic system

Keep well 7.25' from house foundation

Keep plumbing as high as possible

Keep septic lines on contour of land  
Keep plumbing as high as possible

HA Telen  
3/16/93



11743 TRAILS END RD  
TRACT #1

APPROVAL DATE

7/8/93 3/16/93

# CERTIFICATE OF COMPLETION/OPERATION PERMIT



HEALTH DEPARTMENT  
ENVIRONMENTAL HEALTH DIVISION  
1200 BLYTHE BOULEVARD  
CHARLOTTE, NC 28203  
PHONE (704) 376-4603

FILE: 4799A DATE: 10/11/93 #2  
TO: 119 171 1410 ☒ CRT  
SERIAL NO 15356

Name of Owner

Robert C. Ward

Juris.:

Address or Property

11243 Trails End Lane

## Inspection Data:

Tank Material

PCC

Total Length of Drainfield

535'

Number of Lines

5 @ 117'

Cover Depth

10"-18"

Water Supply Source

well

Distance to Water Source

750'

Excavation Inspected

10/11/93

Tank(s) Inspected

10/11/93

Wash Line Inspected

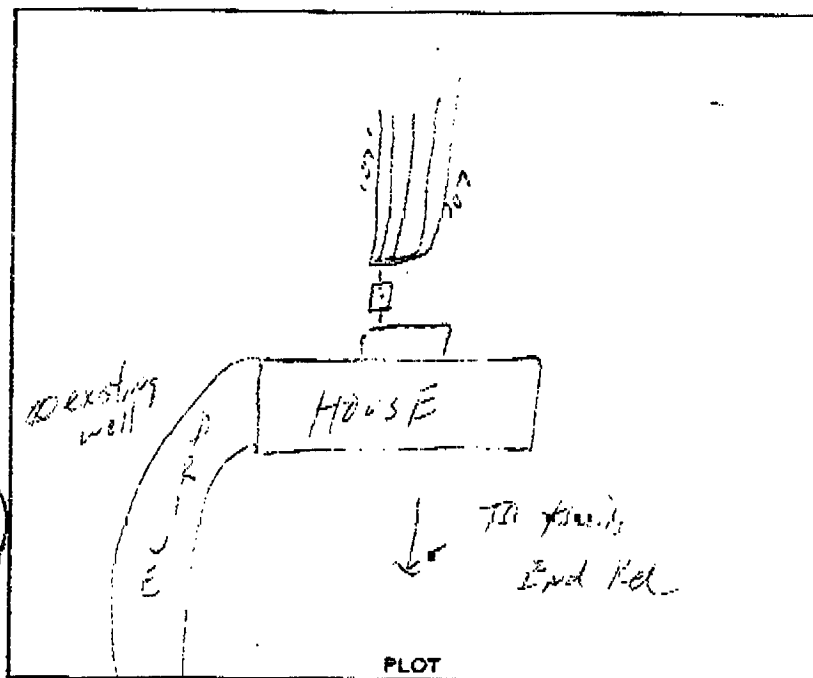
High Water Alarm Inspected

-

Design:

1993, 1500ST, CON, 1610 SFT, 12" ST. WEL

CTR#

Little House

The undersigned has inspected the Septic Tank System described above, and certifies it has been

☒ installed or constructed

☐ altered or repaired

☐ in accordance with the permit issued

☒ as detailed in the plot above

and meets the provisions of 10 NCAC 10A .1900, "Laws And Rules For Sanitary Sewage Collection, Treatment, And Disposal" in effect on the date of issuance of the permit. The issuance of this

☒ Certificate of Completion

☐ Operation Permit

does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 10 NCAC 10A .1900 in addition to those listed below under "COMMENTS." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

COMMENTS:

septic system designed for 4 bedroom houseType IIPhilip M. Ward, P.E.

Environmentalist

EN 41

NOTE: SOLID LINES PER  
FIELD SURVEY,  
DASHED LINES PER  
DEED.

MAP

OF

WELL LOCATION & PIT LOCATION

HUNTERSVILLE, MECKLENBURG COUNTY, N.C.

PROPERTY OF

LARRY GRIFFIN

SCALE  $1" = 200'$  DEED RECORDED 5992-0372 MAP RECORDED

FIELD BOOK JOB NO. 92429 THIS PLAT DOES NOT CONFORM TO GS47-30

\*SUBJECT TO UNDERGROUND UTILITIES, AREA BY D.M.D. METHOD OF AREA COMPUTATION, UPDATED

• = OLD IRON (E.I.P.) O = NEW IRON (N.I.P.) NPS = NO POINT SET

5

BOB COUNCIL  
11743 Trails End Lane  
Huntersville, NC 28682

NO. OF PAGES: 3  
Including this one

DATE: 10/14/93

TO: SOLID WASTE MANAGEMENT DIVISION  
COMPANY NAME

LOCATION

ATTENTION: ELLIS CAYTON  
INDIVIDUAL

DEPARTMENT

FROM: BOB COUNCIL

SENDER'S NAME

REFERENCE: NORTH MECKLENBURG LANDFILL

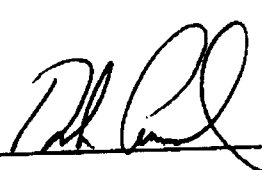
COMMENTS: MR. CAYTON, THANK YOU FOR TAKING TIME TO DISCUSS THE GUIDELINES AND PERMIT REQUIREMENTS FOR C & D LANDFILLS.

ATTACHED PLEASE FIND SITE MAPS AS APPROVED AND AS ACTUALLY BEING OPERATED FOR NORTH MECKLENBURG LANDFILL. IN ADDITION TO THE DEVIATION TO THE SITE PLAN, OTHER AREAS OF NON-COMPLIANCE EXIST. THE BERM AS SHOWN DOES NOT COMPLY WITH SECTION .0505,3(a), AND THE DUMPING AREA DOES NOT COMPLY WITH SECTION .0503,2(f) OF THE SOLID WASTE MANAGEMENT GUIDELINES FOR LANDFILLS. ALSO, THE QUESTION OF FINAL ELEVATION IS STILL AN ISSUE I WOULD LIKE RESOLVED.

I WOULD APPRECIATE IF YOU WOULD DISCUSS MY CONCERNS WITH RICK DOBEY AND KEEP ME INFORMED OF ANY DECISIONS, MEETINGS, CHANGES OR DISCUSSIONS YOU HAVE.

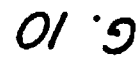
PLEASE CALL ME AT (704)537-9001 IF YOU HAVE QUESTIONS OR INFORMATION.

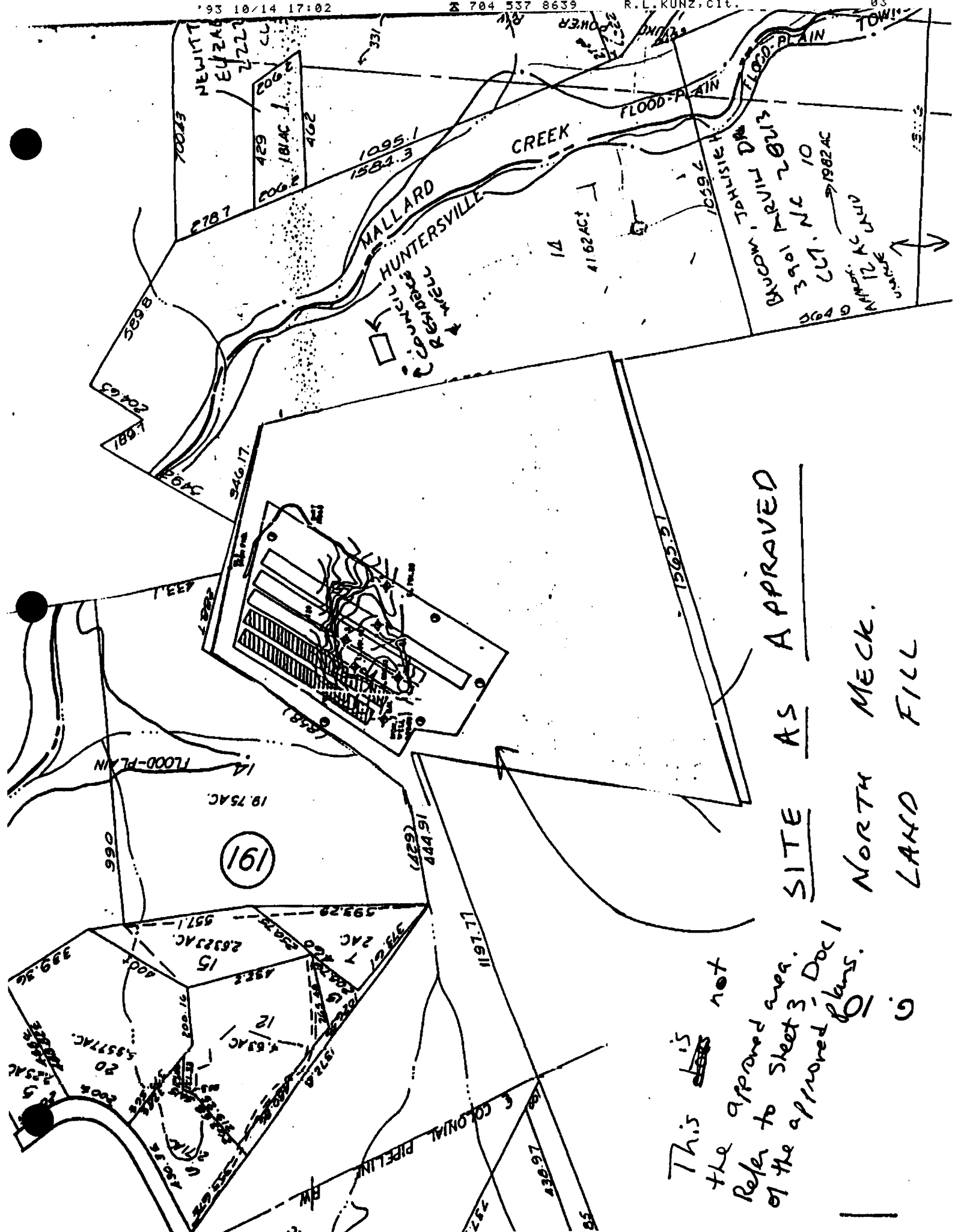
SIGNATURE



For Questions about this transmittal, please telephone: (704) 537-9001

cc. RICK DOBEY



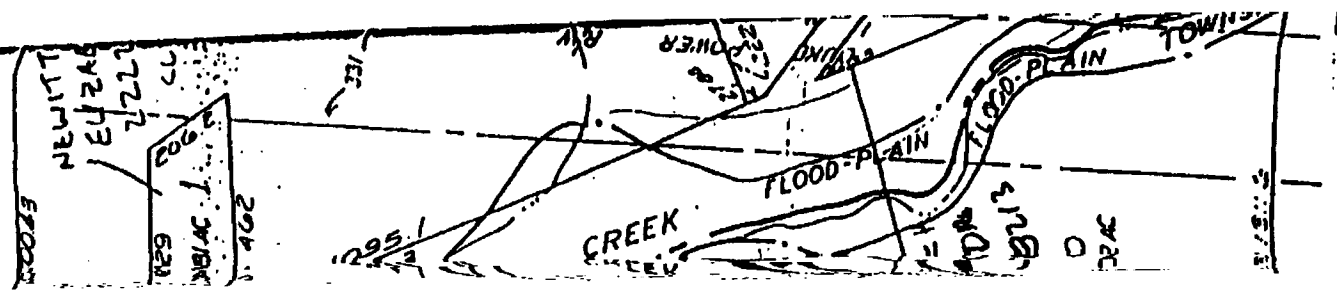


This is not  
the approved area.  
Refer to Sheet 3, Doc 1  
of the approved plans.

SITE AS APPROVED  
NORTH MECK.  
LAND FILL



cc. RICK DOBEY



UNITED STATES POSTAL SERVICE  
OFFICIAL BUSINESS



PENALTY FOR PRIVATE  
USE, \$300

**SENDER INSTRUCTIONS**  
Print your name, address and ZIP Code in the space below.  
• Complete items 1, 2, 3, and 4 on the reverse.  
• Attach to front of article if space permits, otherwise affix to back of article.  
• Endorse article. Return Receipt Requested adjacent to number.

RETURN  
TO

Print Sender's name, address, and ZIP Code in the space below.

JUN 29 1993

NCDEHNR - SOLID WASTE SECTION  
PO BOX 27687  
RALEIGH NC 28078

ATT: ELLIS CAYTON

P 01 767 603



**Receipt for  
Certified Mail**

No Insurance Coverage Provided  
Do not use for International Mail  
(See Reverse)

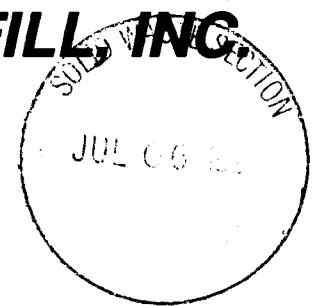
PS Form 3800, June 1991

Sent to <i>Larry Guffin</i>	
Street and No. <i>19141 Highway 73 W</i>	
P.O., State and ZIP Code <i>Huntersville NC 28078</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <i>Permit &amp; Original plans (for Ellis)</i>	

Clayton  
6

# **NORTH MECKLENBURG LANDFILL, INC.**

15300 HOLBROOKS ROAD  
HUNTERSVILLE, NC 28078  
704/875-3367  
704/896-8473



July 1, 1993

Mr. Ellis Cayton  
Environmental Engineer - Solid Waste Section  
NC Dept of Environmental, Health & Natural Resources *PO Box 27687*  
Raleigh, NC 27611-7687

Re: Solid Waste Permit No. 60-13  
Recorded in Book 7361, Page 618-28  
Mecklenburg County Register of Deeds

Dear Mr. Cayton:

Enclosed for your files is a filed copy of Solid Waste Permit No. 60-13 issued to Larry A. Griffin and O. L. Parker to construct and operate a construction and demolition landfill on Holbrooks Road.

Please call if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Larry".

Larry A. Griffin  
Vice-President

Fax Number 704/896-0642

After recording, mail to: H. Parks Helms, Helms, Cannon, K. & Henderson, P.A.  
2300 Two First Union Center, Charlotte, NC 28282 ROD BOX NO. 12

JUDITH A GIBSON REG OF DEEDS MECK NC  
FILED FOR REGISTRATION 06/30/93 16:13  
BK: 07361 PG: 0618/0628 #:0691 24.00

CERTIFIED COPY OF SOLID WASTE PERMIT

**COPY**

I do hereby certify that the attached PERMIT is an exact and true copy of Permit No. 60-13.

James C. Coffey  
James C. Coffey, Supervisor  
Permitting Branch  
Solid Waste Section

North Carolina

Johnston County

I, Sue S. Hodge, a Notary Public for said County and State, do hereby certify that James C. Coffey, Solid Waste Section, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 24<sup>th</sup> day of

June, 1993.

OFFICIAL SEAL

Sue S. Hodge  
NOTARY PUBLIC

My commission expires October 21, 1995.



-Booklet-

CF  
FAC.  
MEK  
60-13  
Permit 13

**APPROVED**  
DIVISION OF SOLID WASTE MANAGEMENT  
DATE 6-24-93 BY JCC

North Mecklenburg Landfill  
Permit No. 60-13  
Mecklenburg County

**HYDROGEOLOGICAL ASSESSMENT**

North Mecklenburg Landfill  
15300 Holbrooks Road  
Huntersville, NC

ESI Job No. ES - 0153

**REPORT OF HYDROGEOLOGICAL ASSESSMENT**

**North Mecklenburg Landfill  
15300 Holbrooks Road  
Huntersville, NC**

**ESI Job No. - ES - 0153**

**Prepared For  
Mr. Larry Griffin  
19141 Hwy. 73 West  
Davidson, NC 28036**

**Prepared By  
Ecological Services, Inc.  
Charlotte, NC**



**Ronald C. Gilkerson  
Senior Hydrogeologist**

**and**



**Paul R. Wachsmuth  
Senior Engineer, P.E.**

**June 18, 1992**

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<b>APPENDICES:</b>	Appendix A:	Test Boring Records
	Appendix B:	Monitoring Well Installation Records
	Appendix C:	Laboratory Test Results

## **1.0 Project Information**

The North Mecklenburg Landfill site is located on Holbrooks Road in Huntersville, North Carolina. See Figure 2 for Boundary Survey. The subject site is approximately 71.6 acres. (Figure 1) It is our understanding that the old demolition landfill was operated on approximately 3 acres (area 1) in the northeast section of the property. We understand that the old demolition landfill was operated from August 1988 to July of 1991. The remaining portion of the three acre tract is currently being used as a stump dump.

Based on a recent requirement by the North Carolina Department of Environment, Health and Natural Resources, Division of Environmental Management, a Hydrogeological Investigation must be performed in order to permit a proposed demolition landfill. This assessment was performed to provide the hydrogeologic information for the proposed 10.00 Acre expansion tract (area B) in the southeast section of the property necessary to permit the site as a demolition landfill. See Figure 2 for Proposed 10.0 Acre Expansion Plan.

## **2.0 Field Exploration**

The site was visited and the drilling locations were selected by Mr. Ron Gilkerson of ESI. The boring locations were selected to best characterize soil conditions of the unsaturated zone in the proposed 10.0 acre tract. The borings were located in the field using a rolo-tape and estimated right angles, referencing existing site features. See Figure 4 for Soil Test Boring Location Plan. The temporary monitoring well locations were selected based on drilling accessibility and predicted ground water flow directions which we inferred from visual observations of site topography. The temporary monitoring well locations were surveyed in the field by Spratt and Brooks Land Surveying and are indicated on Figure 5..

The soil test borings were designated B-1A through B-10A. The temporary monitoring wells were designated TW-2 through TW-6. One monitoring well existed on site prior to the performance of this assessment and has been assigned the designation MW-1.

### **2.1 Soil Test Borings**

The ten soil test borings were drilled using our Dig-R-mobile 550 drill rig employing hollow-stem steel augers to advance the bore holes. Soil sampling was performed at regular intervals using a KVTM 3/4 inch I. D., 1.0 inch O.D. stainless steel tube sampler. The sampler was inserted into the hollow stem augers and driven 12 inches with a rotary impact hammer to the desired sampling depth. Based on this soil sampling procedure no penetration resistance testing was performed at these locations.

During previous assessment activities (Law report dated Sept. 2, 1988), Law Engineering performed three (3) soil test borings on the proposed 10.0 acre tract. However exact boring locations were not documented. We understand that these borings were drilled with a truck mounted drill rig employing hollow stem steel augers. Soil sampling and penetration resistance sampling were performed in general accordance with ASTM D1586. At regular intervals soil samples were obtained with a standard 1.4 inch I.D., 2 inch O.D., split-tube sampler. The sampler was first seated 6 inches to penetrate any loose cuttings, and then driven an additional 12 inches with blows of a 140 pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final 12 inches was recorded and designated as "penetration resistance" on the boring logs. Please note that the borings were performed on proposed 10.0 acre tract prior to mining. The Report of Subsurface Exploration Boring Results is included in Appendix A.

Representative portions of soil samples obtained were classified by a geologist in the field. Test Borings Records are attached (Appendix A), showing soil descriptions and boring termination depths.

## **2.2 Temporary Well Installation**

Five temporary monitoring wells (TW-2 through TW-6) were installed within bore holes resulting from air rotary drilling activities necessary to penetrate the shallow bedrock at the subject site. One existing permanent monitoring well (MW-1) was installed during previous drilling activities. The locations of the newly installed temporary monitoring wells and the existing permanent monitoring wells, are indicated on the attached Monitoring Well Location Plans (Figure 5).

The temporary monitoring wells consisted of 2-inch diameter, Schedule 40, PVC pipe with flush-threaded joints inserted into each 10-inch diameter borehole. The bottom 10-foot section of each well consisted of manufactured well screen with 0.010-inch wide openings. The screen was placed such that the time of drilling water level was within the upper half of the screen. Washed sand backfill was placed around the outside of the pipe to at least one foot above the top of the well screen. The sand backfill was used to stabilize the formation and to help yield a less turbid ground-water sample. A one-foot thick (minimum) bentonite seal was installed on top of the sand backfill to seal the monitoring well at the desired level. The remainder of the borehole was then backfilled with native material to the ground surface.

The Temporary Monitoring Well Installation Records in Appendix B illustrate construction details for each of the recently installed wells.

### **3.0 Area Geology**

The project site is located in the Charlotte Belt of North Carolina. This area of Mecklenburg County lies within the upland section of the Piedmont which is an uplifted, submaturely to maturely peneplane of somewhat resistant rocks.<sup>1</sup> The upland surface which generally slopes south or southeast is interrupted by a number of hills and ridges mainly formed by dissecting streams. The subject site is generally located in a locally high topographic area.

Surface layers in the area of the Charlotte Belt consist of weathered bedrock which granulates readily near the surface of the ground and the cover soils may be composed of individual quartz, hornblende and feldspar crystals. The bedrock is characterized by a Metamorphosed Quartz Diorite in this area of Huntersville, North Carolina. This Diorite in a semi-weathered state is dark blue or gray medium textured rock composed of quartz, hornblende and feldspar and containing varying amounts of biotite, pyroxene and other accessory minerals.

### **4.0 Subsurface Conditions**

#### **4.1 Cover Soils**

Surface coverings encountered in borings B-1A through B-9A consisted of (residual soil) silty fine to coarse sand. Due to mining activities in the area of borings B-1A through B-9A, no top soil was encountered with the exception of boring B-10A. Surface coverings encountered at B-10A consisted of 3-6 inches of topsoil below existing grade.

The residual soil is fairly consistent across the area of study. A layer of light brown to tan micaceous silty sand was identified at all boring locations beginning at grade and ranging to depths from 2-4 feet. The soils became more resistant to drilling activities with depth. Evidence of the parent material in the form of rock fragments and increased grain size were also noted with increasing boring depth. Partially weathered rock was encountered in borings B-1A through B-10A ranging from 3 feet in B-7A to 60 feet in boring B-10A. Figure 6 indicates the cross-section orientation and boring locations. Cross-Section (A-A' and B-B') are included as Figure 7 and Figure 8.

The dotted lines on each cross-section designate inferred lithologic changes in the unit between borings. Actual lithologic changes may be more gradual or abrupt than depicted.

The above description provide a general screening of the subsurface conditions encountered. The attached Test Boring Records (Appendix A) contain detailed information recorded at each boring location. These Test Boring Records represents our interpretation of the field logs based on engineering examination of the field samples.

## **5.0 Hydrogeologic Conditions**

### **5.1 Regional Hydrogeology**

Ground Water recharge in this area of North Mecklenburg County is derived from precipitation. The average annual rainfall of the area is approximately 47 inches. The surficial materials at many places in the county are relatively impermeable saprolite and the fraction of precipitation that reaches the water table may be less than one-third. Seasonal fluctuation of the water table may be considerable during dry or wet seasons. However, on average the net change in water level elevation is small, which indicates that the average annual discharge of ground water is about equal to the average annual recharge.

Ground water movement in crystallized rocks such as (Quartz Diorite) which have little primary pore space are dependent upon the bedrocks interstices such as joints, fractures cleavage planes, planes of shistosity, bedding planes, and solution channels.

The porosity of a rock is the percentage of the total volume that is occupied by the interstices. The porosity of different rock materials may cover a wide range, for example some clays may have porosity of more than 50 percent, while some crystallized rock may be less than 1 percent pore space.

A material may have a high porosity and yet yield little water. For example, clays have porosities as high as 50 percent, and yet yield little due to the flat particle shape which tends to layer and trap water. The same is true for crystallized rocks such as the Quartz Diorite where the interstices are isolated or poorly interconnected.

### **5.2 Site Hydrogeology**

Inflow-type permeability tests were conducted in two monitoring wells (MW-1 & TW-2) to determine the hydraulic conductivity, K, of the material through which ground water recharges these wells. The hydraulic conductivity is a constant of proportionately relating to the ease with which a fluid passes through a porous medium. The field procedure involves the measurement of the depth to the ground water in a well, removal of the water from the well by bailing or pumping and measurement of the rate of the recovering ground-water level. The hydraulic conductivity is then computed by the variable head method (Bower and Rice Method, 1976). A summary of the well permeability test results is presented in Table 2.

In-situ permeabilities computed for selected monitoring wells at this time range from  $9.2 \times 10^{-6}$  centimeters per second (cm./sec.) to  $1.6 \times 10^{-5}$  (cm./sec.)

The ground water level measurements obtained on June 16, 1992 indicates a west-northwest groundwater flow direction on the proposed 10.0 acres tract. See Figure 9 for Ground Water Flow Direction Map. The groundwater gradient at the site in the shallow unconfined Aquifer zone is approximately .06 ft/ft. throughout the investigated section of the property.

Ground water movement is often related to topography, lithology, structure, elevation of recharge and discharge areas and manmade influence. Table 1 indicates the Ground Water Elevation Data.

## **6.0 Laboratory Testing**

### **6.1 Cover Soils**

Three representative samples of the cover soils were obtained from borings B-1A, B-2A and B-3A. These soil samples were representative of the cover material across the proposed cell area. The cover soil samples were obtained from auger cuttings at a depth of 0-2 ft. below grade. Each collected soil sample was placed in a new 5 gallon plastic sample bucket, covered and delivered to Law Engineering to perform testing according to the appropriate sections of the following ASTM standards:

ASTM D 698	"Standard Test Method for Moisture Density Relations of Soils and Soil Aggregate Mixtures Using a 5.5 lb. (2.49kg) Rammer and 12 in (305mm) Drop"
ASTM D 5084	"Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter"
ASTM D 4318	"Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils"
ASTM D 422	"Standard Test Method for Particle-Size Analysis of Soils"

The results of Constant Head Permeability Testing on the Cover Soil Samples is summarized in Table 3. A summary of Grain Size Distribution Testing is indicated in Table 4. The Report of Laboratory Testing (Plan Job No. 226-09425-01, dated June 9, 1992) is included in Appendix C.

## **7.0 Water Well Usage**

As required by DEHNR, Solid Waste Management Section, a 1/4 mile water well usage survey has been conducted and submitted under separate cover.

**PROPOSED MONITORING PLAN**

## **1.0 Monitoring Plan Objective**

The proposed Ground Water Monitoring Plan is intended to determine the absence/presence of groundwater contamination associated with the operation of the proposed 10.0 acre demolition landfill tract. Ground water sampling activities will be performed semi-annually. This plan presents our recommended ground water monitoring program which includes well locations, well construction details, ground water sampling and chemical testing.

## **2.0 Monitoring Well Installation**

Five Type II ground water monitoring wells are proposed to be installed at the approximate well locations shown on the attached proposed Monitoring Well Location Plan (Figure 10). Each well will be installed by air rotary method which is necessary to penetrate the relatively shallow bedrock at the subject site. Due to construction details of existing well MW-1, ESI does not recommend utilizing this well as a downgradient monitoring well.

The Type II wells will consist of 2-inch diameter, Schedule 40, PVC pipe with flush-threaded joints inserted each 10-inch diameter borehole. The bottom 15-foot section of each well consisted of manufactured well screen with 0.010-inch wide openings. The screen will be placed so that the time-of-drilling water level was within the upper half of the screen. Washed sand backfill will be placed around the outside of the pipe to at least one foot above the top of the well screen. The sand backfill will be used to stabilize the formation and to help yield a less turbid ground-water sample. A two-foot thick (minimum) bentonite seal will be installed on top of the sand backfill to seal the monitoring well at the desired level. The remainder of the borehole will then be grouted with a cement/bentonite mixture to the ground surface. A lockable above-ground steel protective stand up cover will be placed over each well.

The Monitoring Well Installation Diagram (Figure 11) illustrates construction details for the proposed monitoring wells.

### **2.1 Well Development and Ground Water Sampling**

Following stabilization of water levels in the newly installed monitoring wells, water levels will be measured prior to each sampling event with an oil/water interface probe to determine depth to the water surface. The measured value will be used in conjunction with the total casing depth to determine the height of the water column and the volume of water standing in each well will then be calculated. The monitoring wells will be developed by bailing/pumping at least 3-5 the volume/water within the wells, including the sand pack or to dryness twice. Development will be continued (if necessary) until the development water runs clear or the pH and conductivity measurements stabilize.



After allowing a minimum of twenty-four hours after development, ground water samples will be collected from the newly installed and existing ground water monitoring wells using clean teflon bailers. Prior to sampling the wells they will be purged by removal of at least three volumes of ground water, including sandpack, and allowed to recover to 60% of their initial head, or 24 hours, whichever occurs first..

The wells will be sampled using bailers constructed of 3 ft. long, 1.6-inch diameter teflon pipe. To minimize the potential for cross-contamination between wells, the bailers were cleaned with laboratory soap, rinsed with distilled water, rinsed with dilute hydrochloric acid, rinsed with distilled water, rinsed with isopropyl alcohol and finally rinsed with distilled water prior to sampling each well.

At the time the water samples are collected from the wells, pH, temperature, and specific conductivity will be recorded in the field to ensure that representative ground water is being obtained for chemical analysis. Measurement of the sample temperature will be made using a mercury thermometer. Field measurement of pH will be conducted with a portable pH meter and specific conductivity will be measured with a conductivity meter.

A bailer rinse blank sample will be obtained in the field by pouring distilled water into a sampling bailer and then into the appropriate glass container. A laboratory trip blank also will accompany the well samples. The ground water samples and quality assurance blanks will be labeled with identifying numbers, properly preserved and shipped by an overnight courier to Industrial and Environmental Analyst (IEA) in Research Triangle Park, NC for chemical analysis. Appropriate chain-of-custody record will be maintained.

### **3.0 Ground Water Flow Direction**

Monitoring well top-of-casing elevations shall be surveyed on all newly installed and existing monitoring wells to a common datum (if possible, utilizing a USGS survey pin or other permanent feature). After well development and fluids stabilization, water level and product thickness measurements shall be made. An estimate of ground water flow direction shall be made through construction of a ground water contour and flow direction map. All calculations and equation references shall be documented.

### **4.0 Report Preparation**

At the completion of each semi-annual sampling event, a summary of our field activities, collected data, laboratory results will be made to DEHNR-Solid Waste Management in a letter report.

## REFERENCES

1. Geology and Ground Water in the Charlotte area, North Carolina, Bulletin Number 64, H. E. LeGrand and M. J. Mundoree, Geologists, U. S. Geological Survey, 1952.
2. 1 Fenneman, N. M. Physiographic divisions of the United States: Am. Geographers Annuals, Vol. 18, No. 4, P. 290, 1928.
3. Geologic Map of North Carolina, Department of Natural Resources and Community Develop, Division of Land Resources, 1985.

## TABLES

**Table 1**

**Summary of Water Table Elevations  
North Mecklenburg Landfill  
Huntersville, NC**

All measurements in feet below grade			
Well #	Surveyed Elevation (Top of Casing)	Depth to Water (Top of Casing)	Ground Water Elevation
MW-1	690.57	16.58	673.99
TW-2	690.53	12.40	678.13
TW-3	692.61	5.95	686.66
TW-4	694.24	6.94	687.30
TW-5	696.04	6.82	689.22
TW-6	711.16	15.20	695.96
* Ground Elevations Measured on 6/16/92			

**Table 2**  
**Well Permeability Testing Results**  
**North Mecklenburg Landfill**  
**Huntersville, NC**

<u>Well Numbers</u>	<u>Permeability-K(cm/sec)</u>
MW-1 .....	9.2 x 10 <sup>-6</sup> cm/sec
TW-2 .....	1.6 x 10 <sup>-5</sup> cm/sec

Inflow Permeability Tests Performed on 6/10/92.

**Table 3**  
**Constant Head Permeability Testing Data**  
**Cover Soil Material**

Test Data	Soil Sample B-1A	Soil Sample B-2A	Soil Sample B-3A
Dry Density(pcf):	113.3	115.3	110.5
Initial Moisture Content (%):	14.6	13.3	14.9
Final Moisture Content (%):	16.6	15.7	18.9
Sample Length (cm):	5.10	5.13	5.08
Sample Area (cm <sup>2</sup> ):	41.91	41.91	41.91
Head (cm):	140.68	140.68	140.68
Quantity of Water Passing Through Sample (cm <sup>3</sup> ):	145.2	63.0	107.2
Elapsed Time (sec.):	2640	3540	3660
Temperature (°F):	73	73	73
Viscosity Correction Factor:	1	1	1
Coefficient of Permeability -k (cm/sec.)	4.8 x 10 <sup>-5</sup>	1.5 x 10 <sup>-5</sup>	2.5 x 10 <sup>-5</sup>
* Sample tested in accordance with ASTM D5084 Method A.			

The grain size distribution test report indicates the following.

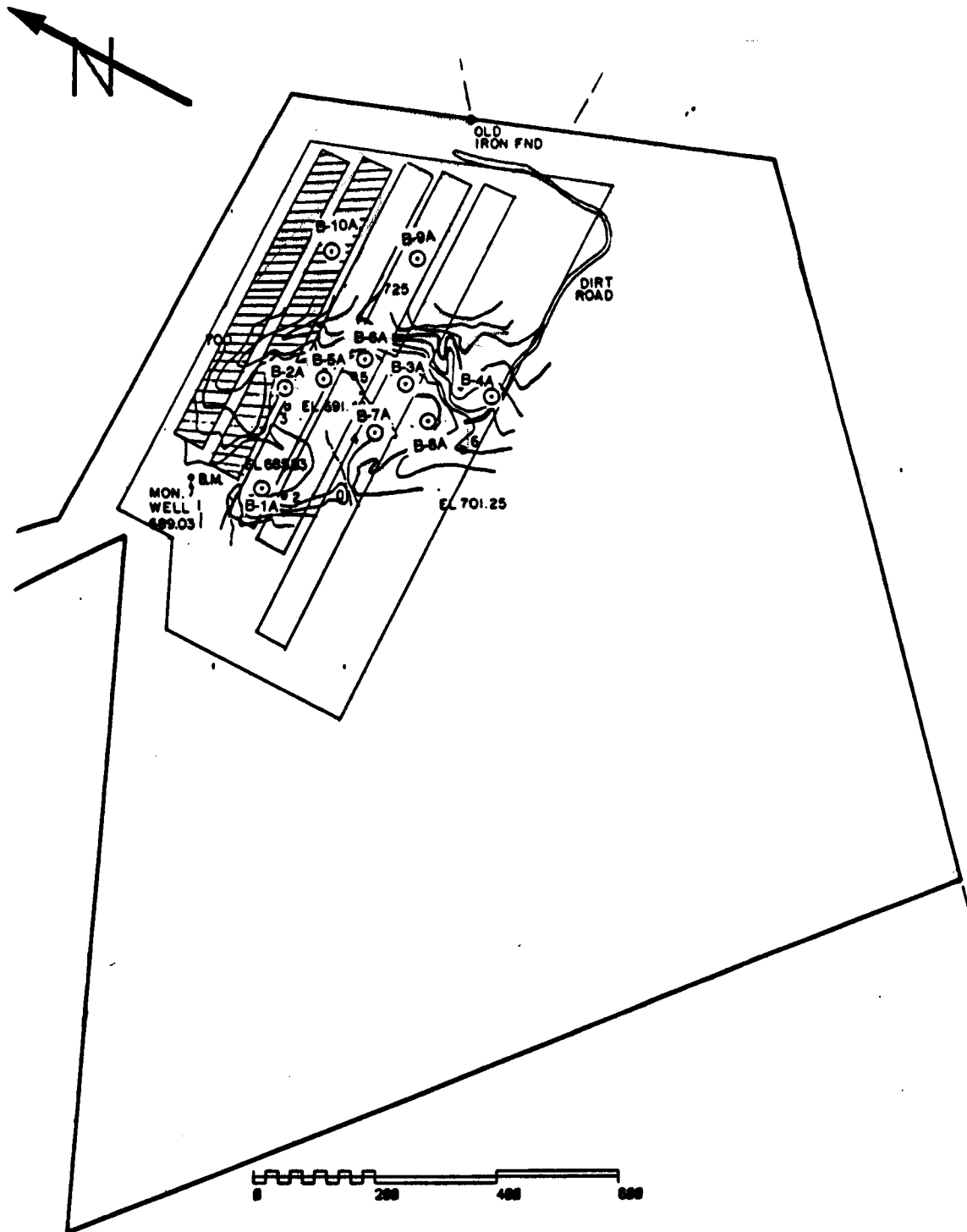
**Table 4**

**Summary of Grain Size Distribution Testing  
Cover Soil Material**

Soil Sample	%+75	% Gravel	%Sand	%Silt	%Clay
B-1A	0.0	0.2	84.7	10.4	4.7
B-2A	0.0	0.3	82.7	12.2	4.8
B-3A	0.0	0.0	68.9	23.5	7.6

## FIGURES





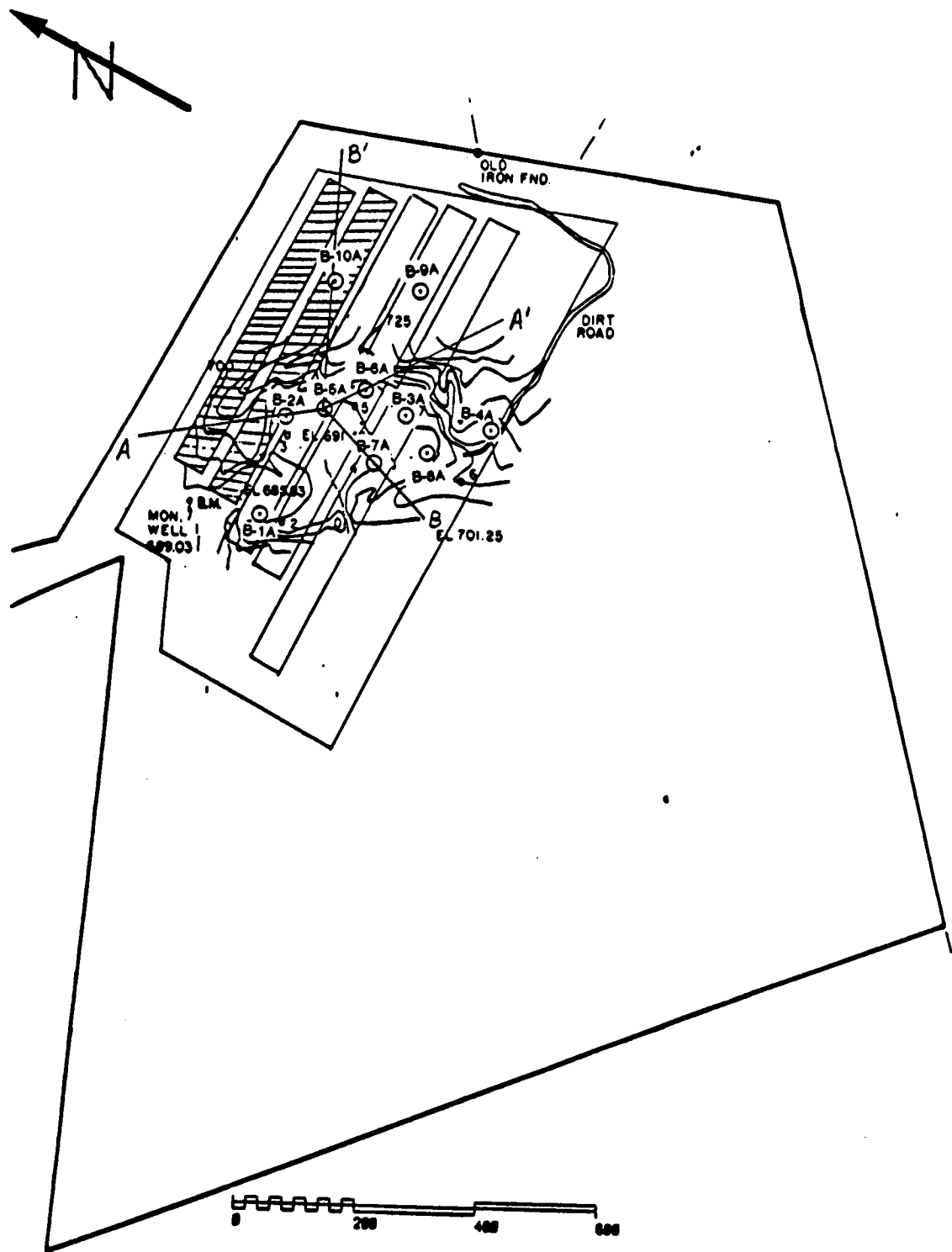
⊙ APPROXIMATE LOCATION OF SOIL TEST BORING

SCALE: ON DRAWING

DATE: JUNE, 15, 1992

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FIGURE # 4 SOIL TEST  
BORING LOCATION PLAN  
LARRY GRIFFIN  
N.MECK. LANDFILL  
HUNTERVILLE, NC



SCALE: ON DRAWING

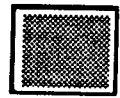
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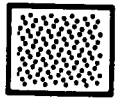
FIGURE: 6 CROSS  
SECTION DESIGNATION  
MAP  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERVILLE, NC

# DESCRIPTION

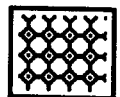
APPROXIMATE  
ELEVATION  
BASED  
ON MEAN SEA  
LEVEL



RESIDUUM - LIGHT BROWN TO TAN  
MICACEOUS SLIGHTLY SILTY FINE  
TO MEDIUM SAND



LIGHT BROWN TO TAN MICACEOUS  
SLIGHTLY SILTY FINE TO MEDIUM  
SAND WITH ROCK FRAGMENTS



LIGHT BROWN TO TAN MICACEOUS  
SLIGHTLY SILTY FINE TO MEDIUM  
SAND WITH ROCK FRAGMENTS  
AND CLAYEY SOIL POCKETS

0'

40'

APPROXIMATE

HORIZONTAL SCALE

B-2A

LAND  
SURFACE

B-5A

B-6A

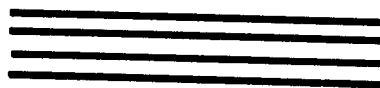
690'

A'

SCALE: ON DRAWING

DATE: JUNE 15, 1992

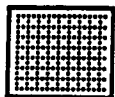
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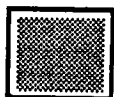
ECOLOGICAL SERVICES, INC.

FIGURE: #7 CROSS SECTION  
A - A'

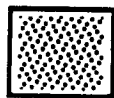
LARRY GRIFFIN  
N. MECK, LANDFILL



RESIDUUM - LIGHT BROWN  
TO TAN MICACEOUS  
SLIGHTLY SILTY FINE TO  
MEDIUM SAND WITH ROCK  
FRAGMENTS



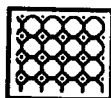
RESIDUUM - LIGHT BROWN TO TAN  
MICACEOUS SLIGHTLY SILTY FINE  
TO MEDIUM SAND



LIGHT BROWN TO TAN MICACEOUS  
SLIGHTLY SILTY FINE TO MEDIUM  
SAND WITH ROCK FRAGMENTS



CONSOLIDATED QUARTZ DIORITE  
FRAGMENTS INTERMIXED WITH LIGHT  
BROWN TO TAN SILTY FINE TO  
COARSE SAND



LIGHT BROWN TO TAN  
MICACEOUS SLIGHTLY  
SILTY FINE TO MEDIUM  
SAND WITH ROCK FRAGMENTS  
AND CLAYEY SOIL POCKETS

APPROXIMATE  
ELEVATION BASED  
ON MEAN SEA  
LEVEL

B-10A

725'

0' 60'

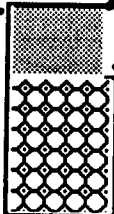
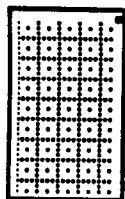
APPROXIMATE

HORIZONTAL SCALE

B-7A

LAND SURFACE

B-5A



B

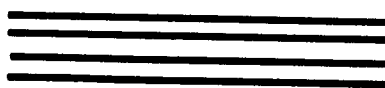
B'

665'

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DATE: JUNE, 15, 1992

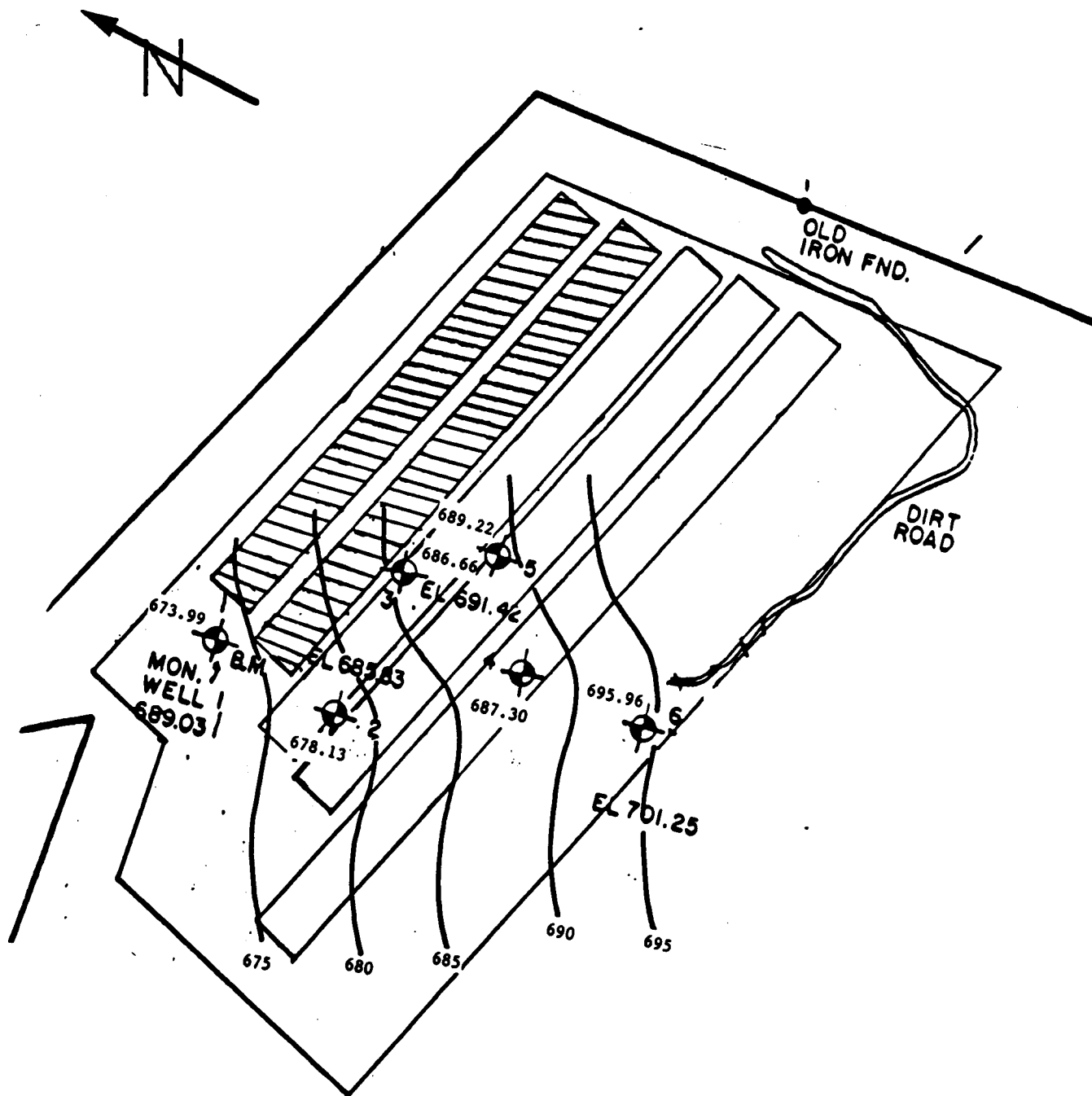
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FIGURE: #8 CROSS SECTION B - B''

LARRY GRIFFIN  
N. MECK, LANDFILL

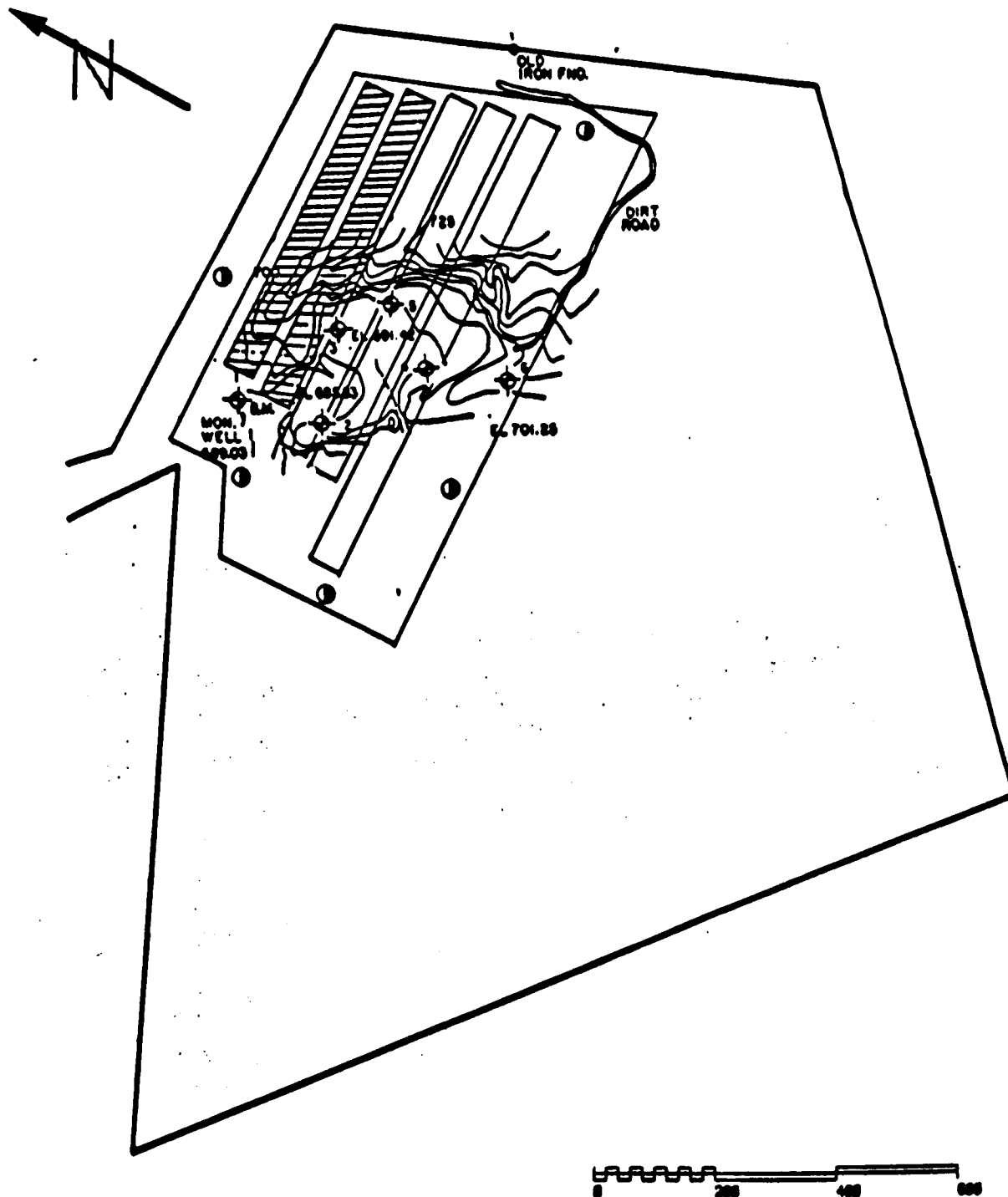


SCALE: ON DRAWING

DATE: JUNE, 15, 1992

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FIGURE: #9 GROUND WATER  
FLOW DIRECTION MAP  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERSVILLE, NC



① APPROXIMATE LOCATIONS OF PROPOSED GROUND WATER MONITORING WELLS

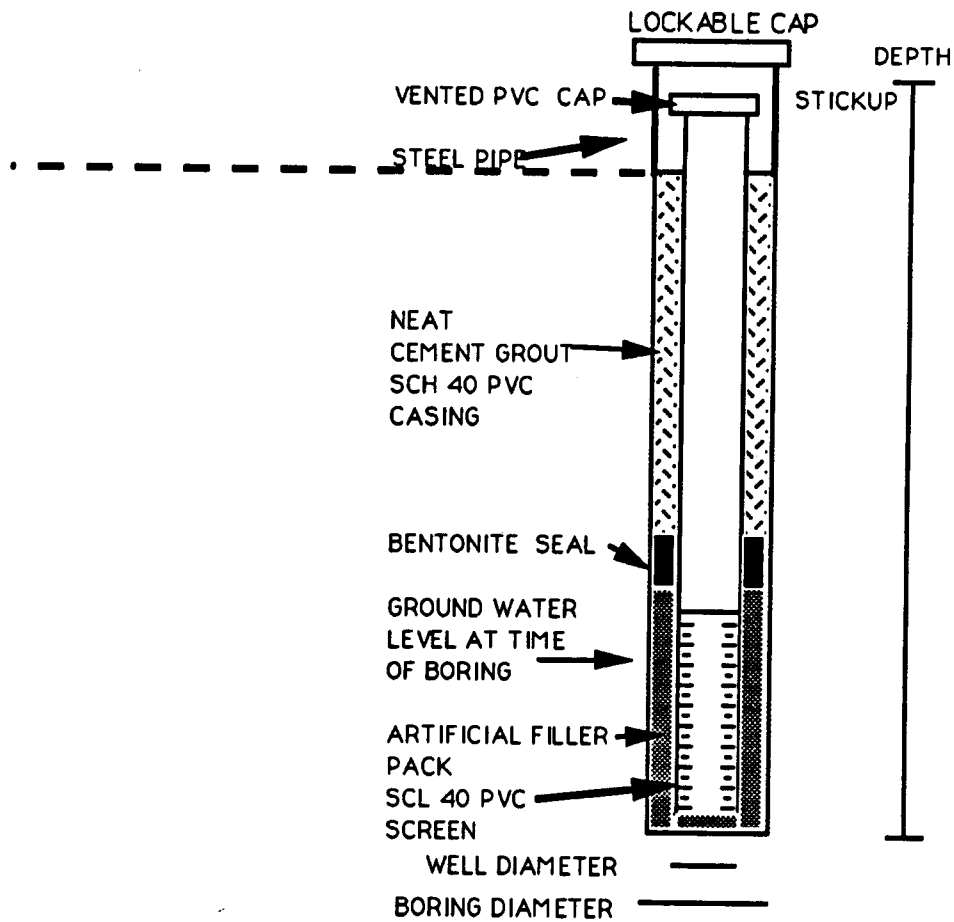
SCALE: ON DRAWING

DATE: JUNE, 15, 1992

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FIGURE: #10 PROPOSED  
MONITORING WELL  
LOCATION PLAN  
LARRY GRIFFIN  
N.MECK. LANDFILL  
HUNTERVILLE, NC

# GROUND WATER MONITORING WELL CONSTRUCTION DETAILS



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

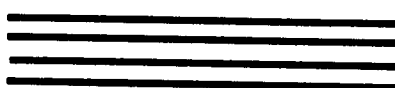
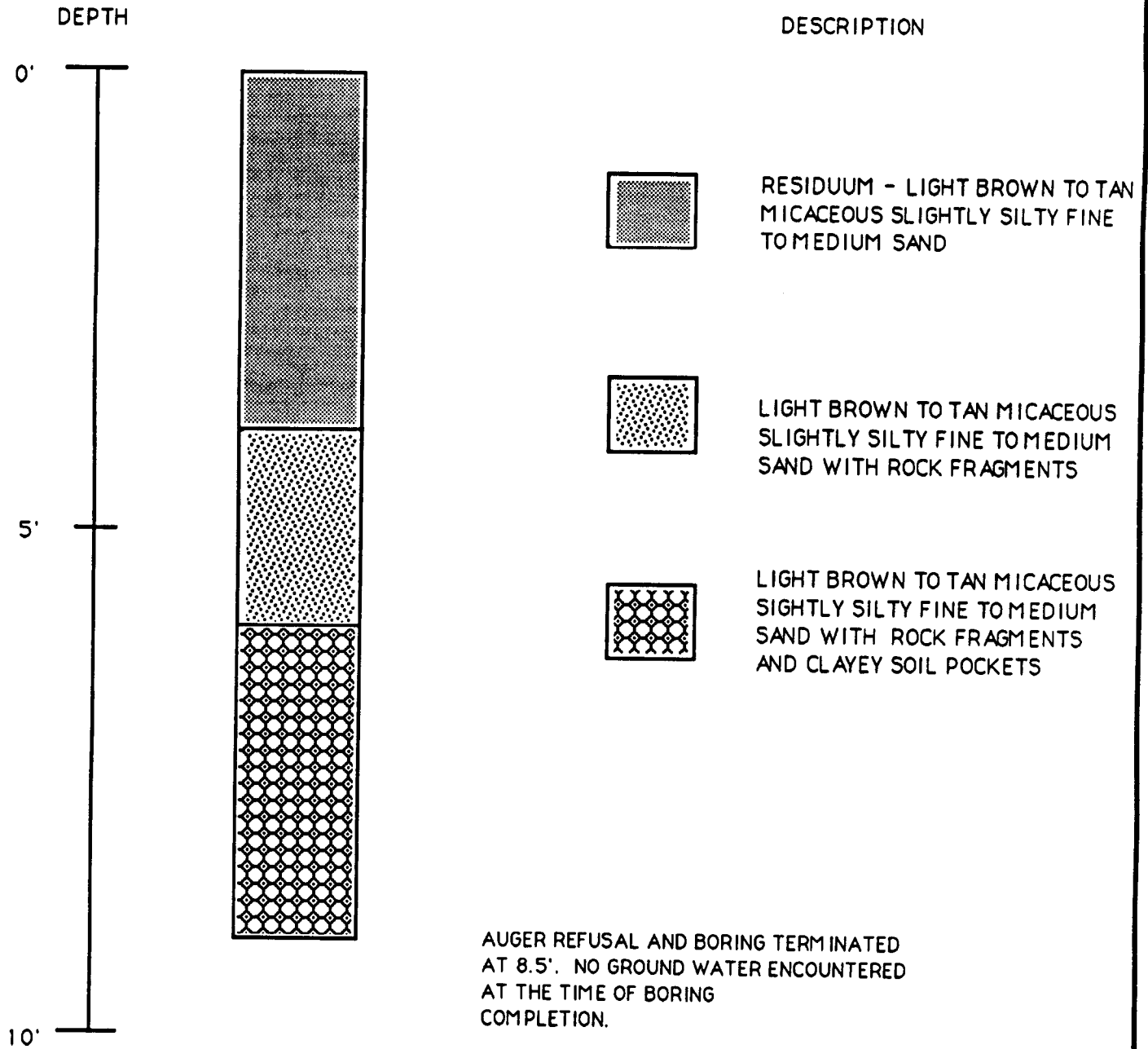
**ESI**   
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FIGURE: # 11 MONITOR WELL  
CONSTRUCTION DIAGRAM  
LARRY GRIFFIN  
N.MECK. LANDFILL  
HUNTERVILLE, NC

**APPENDIX A**  
**TEST BORING RECORDS**




# SOIL BORING LOG B-1A



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

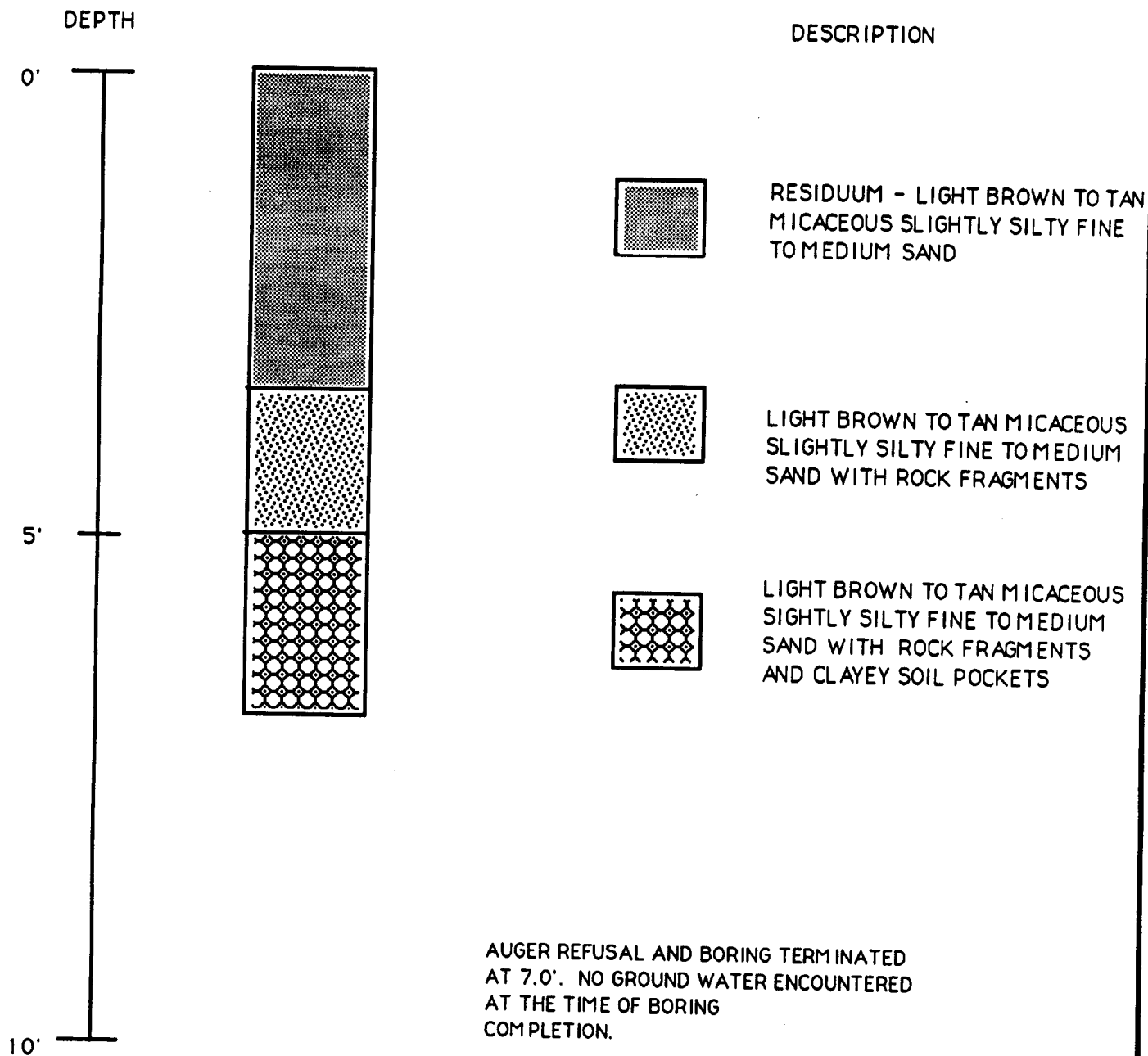
**ESI** 

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SOIL BORING LOG  
B-1A

LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERSVILLE, NC

# SOIL BORING LOG B-2A

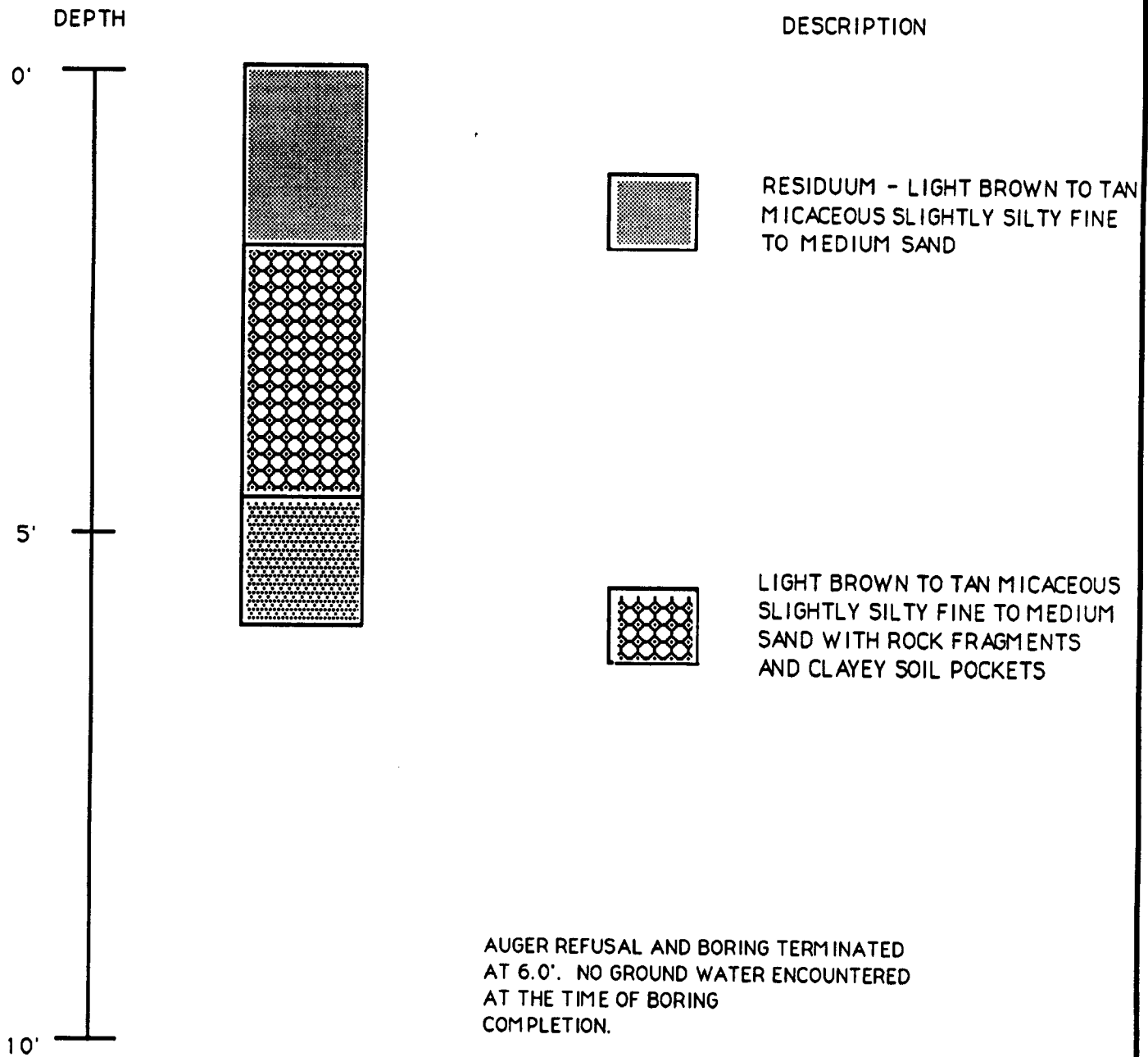


SCALE: ON DRAWING  
DATE: JUNE, 15, 1992

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ECOLOGICAL SERVICES, INC.

SOIL BORING LOG B-2A  
LARRY GRIFFIN  
N. MECKLANDFILL  
HUNTERSVILLE, NC

# SOIL BORING LOG B-3A

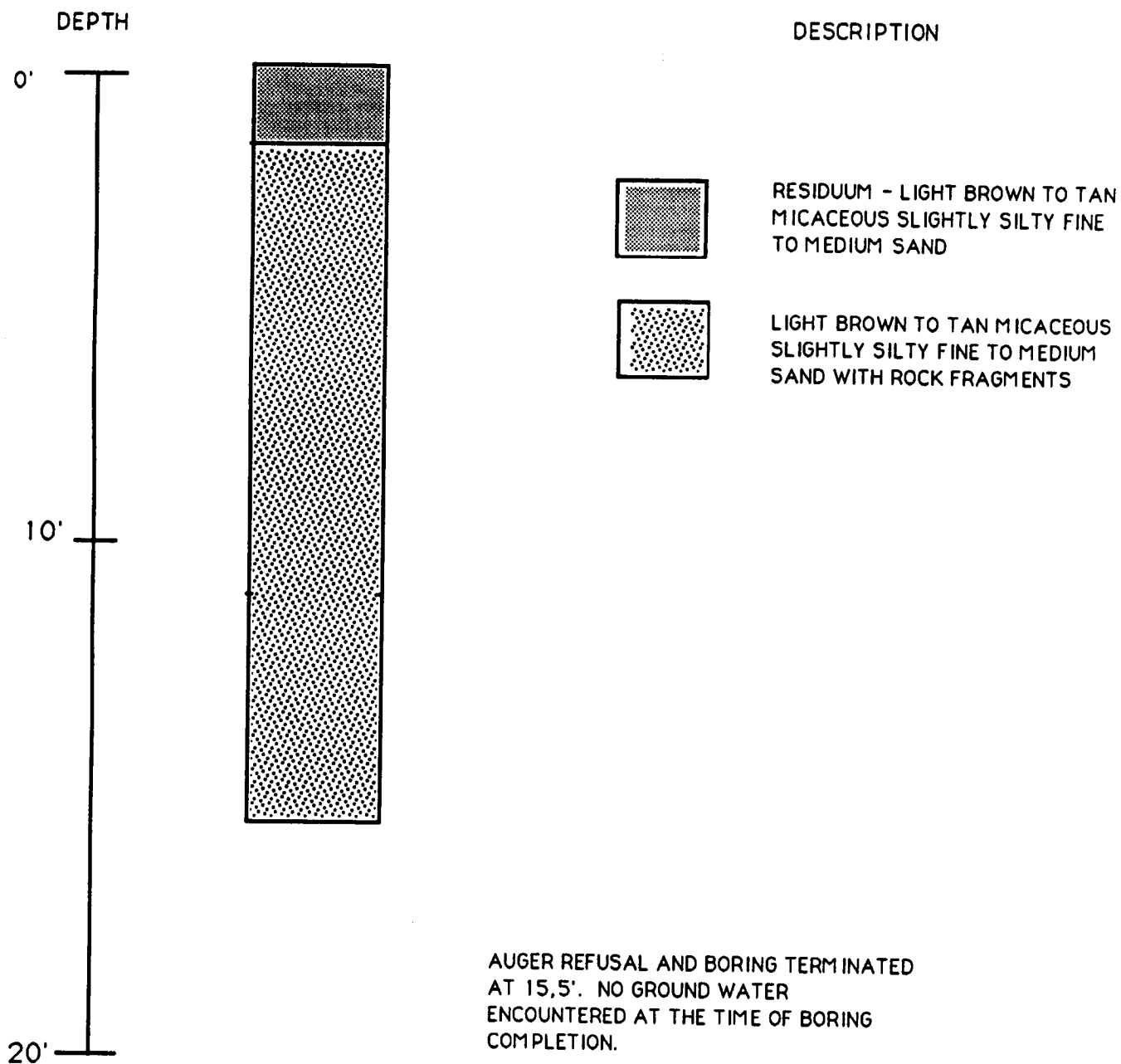


SCALE: ON DRAWING  
DATE: JUNE, 15, 1992

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SOIL BORING LOG B-3A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERVILLE, NC

# SOIL BORING LOG B-4A

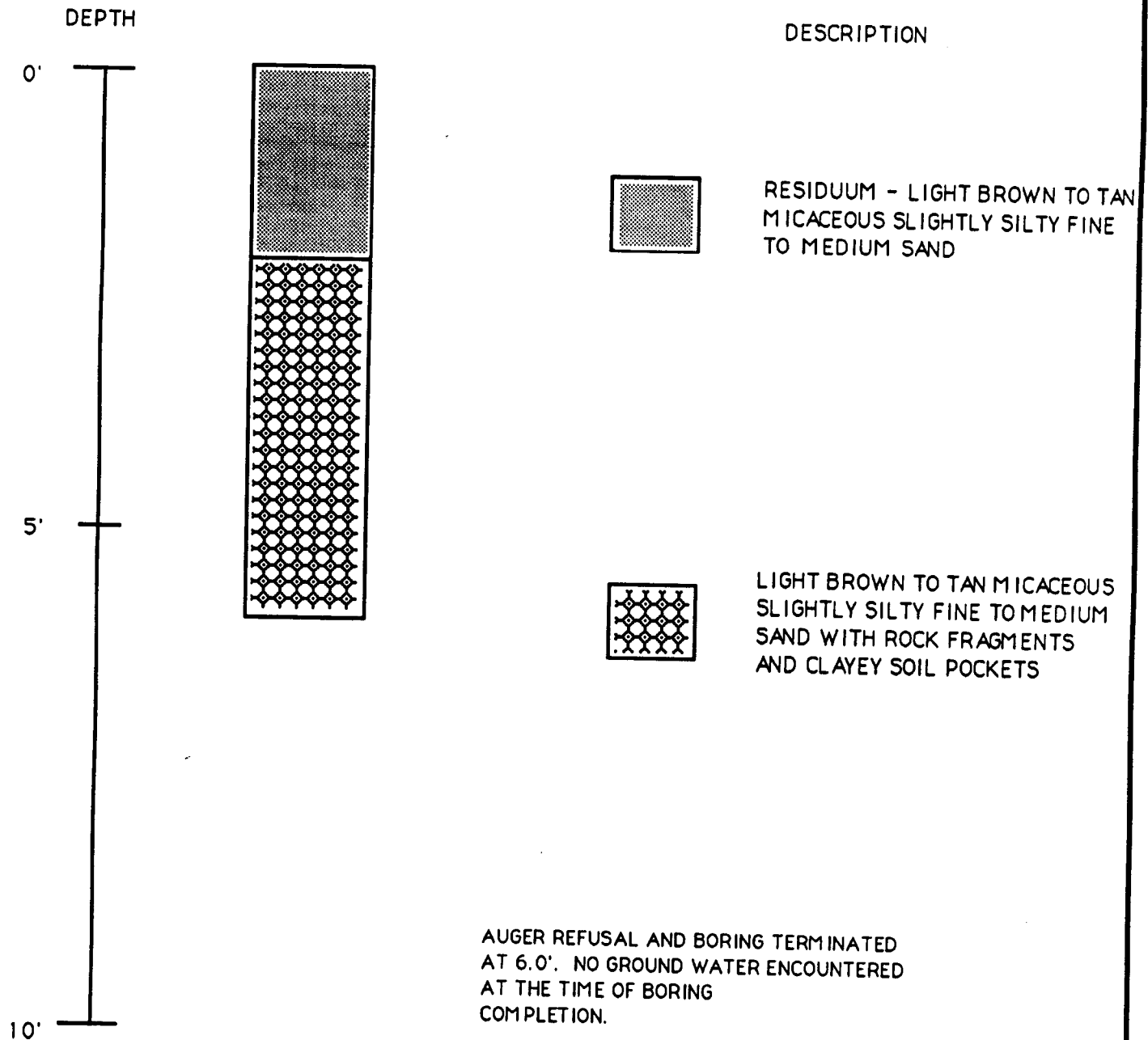


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DATE: JUNE, 15, 1992

**ESI**   
ECOLOGICAL SERVICES, INC.

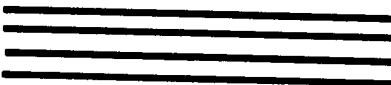
SOIL BORING LOG B-4A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERVILLE, NC

# SOIL BORING LOG B-5A



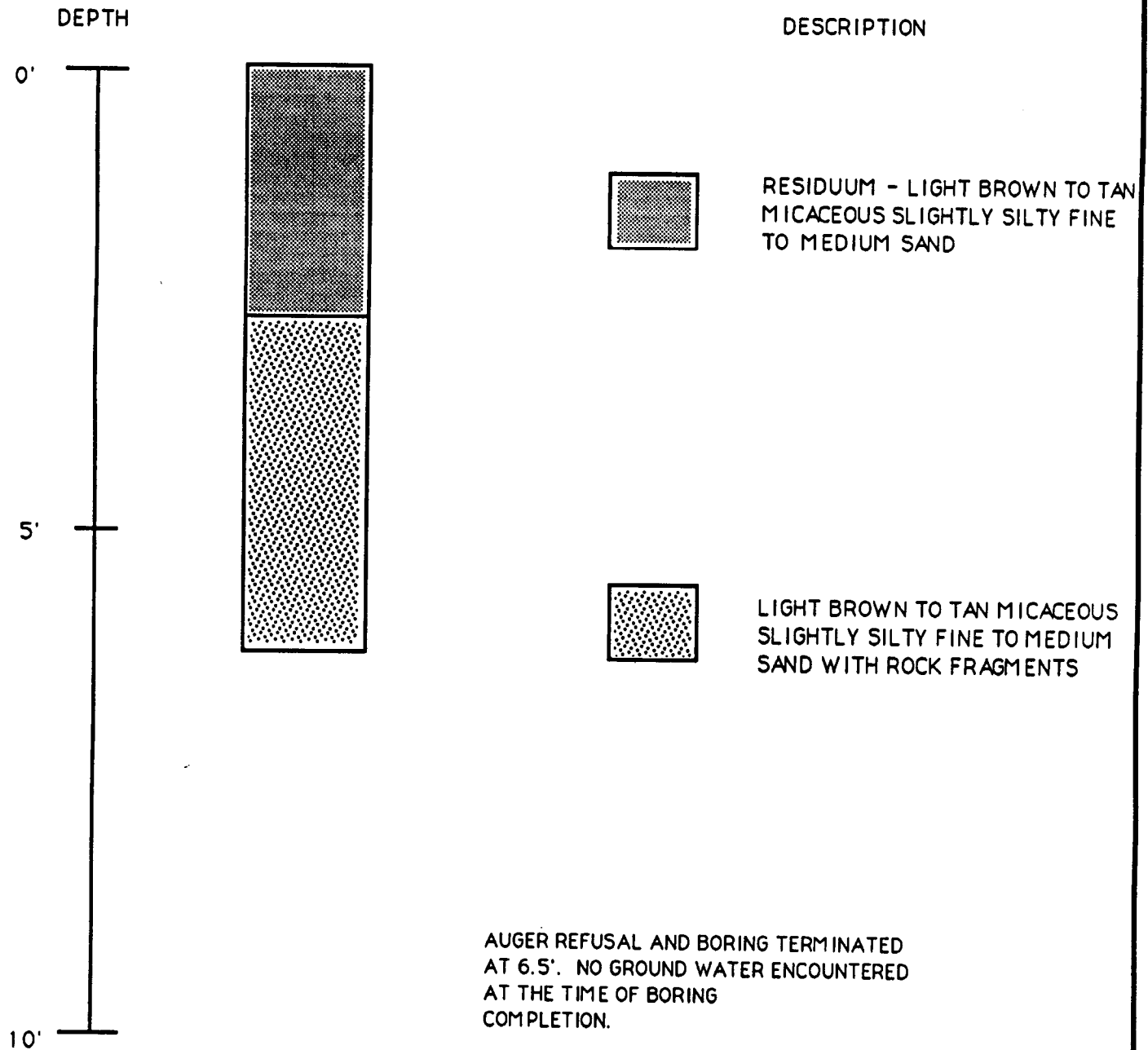
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DATE: JUNE, 15, 1992


ESI   
ECOLOGICAL SERVICES, INC.

SOIL BORING LOG B-5A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERSVILLE, NC

SOIL BORING  
LOG  
B-6A

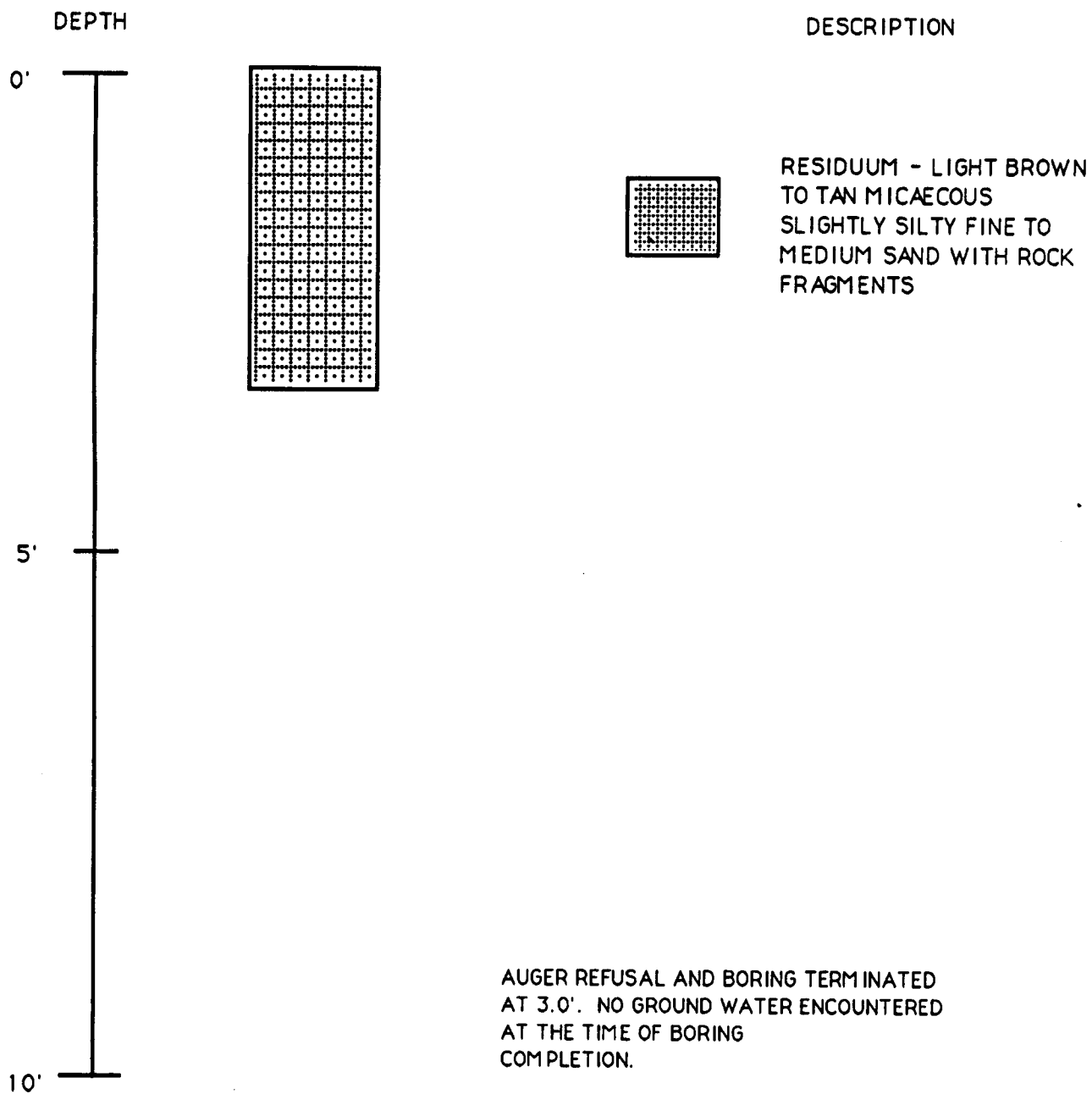


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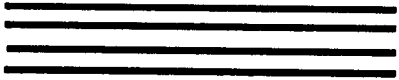
ESI   
ECOLOGICAL SERVICES, INC.

SOIL BORING LOG B-6A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERVILLE, NC

# SOIL BORING LOG B-7A



SCALE: ON DRAWING  
DATE: JUNE, 15, 1992

ESI   
ECOLOGICAL SERVICES, INC.

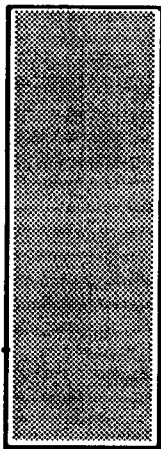
SOIL BORING LOG B-7A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERSVILLE, NC

SOIL BORING  
LOG  
B-8A

DEPTH

DESCRIPTION

0'



RESIDUUM - LIGHT BROWN TO TAN  
MICACEOUS SLIGHTLY SILTY FINE  
TO MEDIUM SAND

5'

10'

AUGER REFUSAL AND BORING TERMINATED  
AT 4.0'. NO GROUND WATER ENCOUNTERED  
AT THE TIME OF BORING  
COMPLETION.

SCALE: ON DRAWING

DATE: JUNE, 15, 1992

ESI

ECOLOGICAL SERVICES, INC.

SOIL BORING LOG B-8A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERVILLE, NC

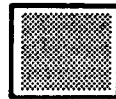
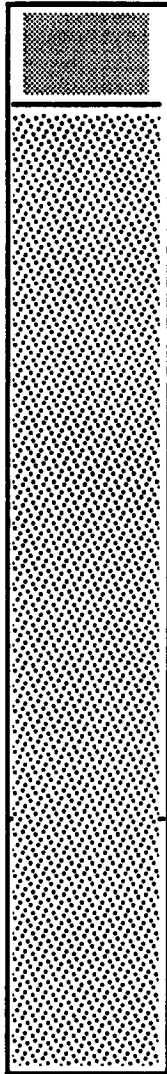


# SOIL BORING LOG B-9A

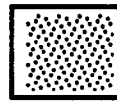
DEPTH

DESCRIPTION

0'



RESIDUUM - LIGHT BROWN TO TAN  
MICACEOUS SLIGHTLY SILTY FINE  
TO MEDIUM SAND



LIGHT BROWN TO TAN MICACEOUS  
SLIGHTLY SILTY FINE TO MEDIUM  
SAND WITH ROCK FRAGMENTS

10'

20'

AUGER REFUSAL AND BORING TERMINATED  
AT 18.0'. NO GROUND WATER  
ENCOUNTERED AT THE TIME OF BORING  
COMPLETION.

SCALE: ON DRAWING

DATE: JUNE, 15, 1992

ESI

ECOLOGICAL SERVICES, INC.

SOIL BORING LOG B-9A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERVILLE, NC

# SOIL BORING LOG B-10A

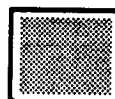
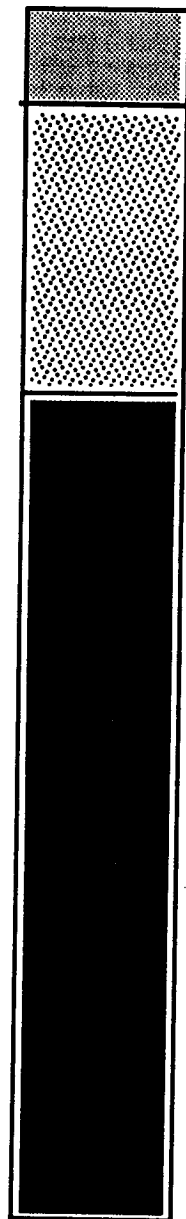
DEPTH

DESCRIPTION

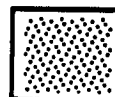
0'

30'

60'



RESIDUUM - LIGHT BROWN TO TAN  
MICACEOUS SLIGHTLY SILTY FINE  
TO MEDIUM SAND



LIGHT BROWN TO TAN MICACEOUS  
SLIGHTLY SILTY FINE TO MEDIUM  
SAND WITH ROCK FRAGMENTS



CONSOLIDATED QUARTZ DIORITE  
FRAGMENTS INTERMIXED WITH LIGHT  
BROWN TO TAN SILTY FINE TO  
COARSE SAND

AUGER REFUSAL AND BORING TERMINATED  
AT 60'. NO GROUND WATER ENCOUNTERED  
AT THE TIME OF BORING  
COMPLETION.

SCALE: ON DRAWING

DATE: JUNE, 15, 1992

**ESI**   
ECOLOGICAL SERVICES, INC.

SOIL BORING LOG B-10A  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERSVILLE, NC



**LAW ENGINEERING**

GEOTECHNICAL, ENVIRONMENTAL  
& CONSTRUCTION MATERIALS  
CONSULTANTS

September 21, 1988

O. L. Parker Grading Company  
2742 Miranda Road  
Charlotte, North Carolina 28216

Attention: Mr. O. L. Parker  
President

Subject: Subsurface Exploration Boring Results  
North Mecklenburg Landfill  
15300 Holbrooks Road  
Huntersville, North Carolina  
Law Job No. CH 6544

Gentlemen:

Submitted attached to this transmittal letter are Test Boring Records for the three (3) subsurface exploration borings performed at the referenced site. The locations of the test borings were established in the field by the client. No site plan was provided referencing the accurate boring locations.

The subsurface materials' classifications and stratifications designated on the Test Boring Records were developed on the basis of field observations. Appropriate laboratory testing (grain size distribution analysis, etc.) could be performed to assist in more accurate classifications of the materials. No engineering analyses or recommendations were developed from the results of the field exploration.

We appreciate the opportunity to be of service to you on this project. If we can be of additional assistance, please contact our office.

Very truly yours,

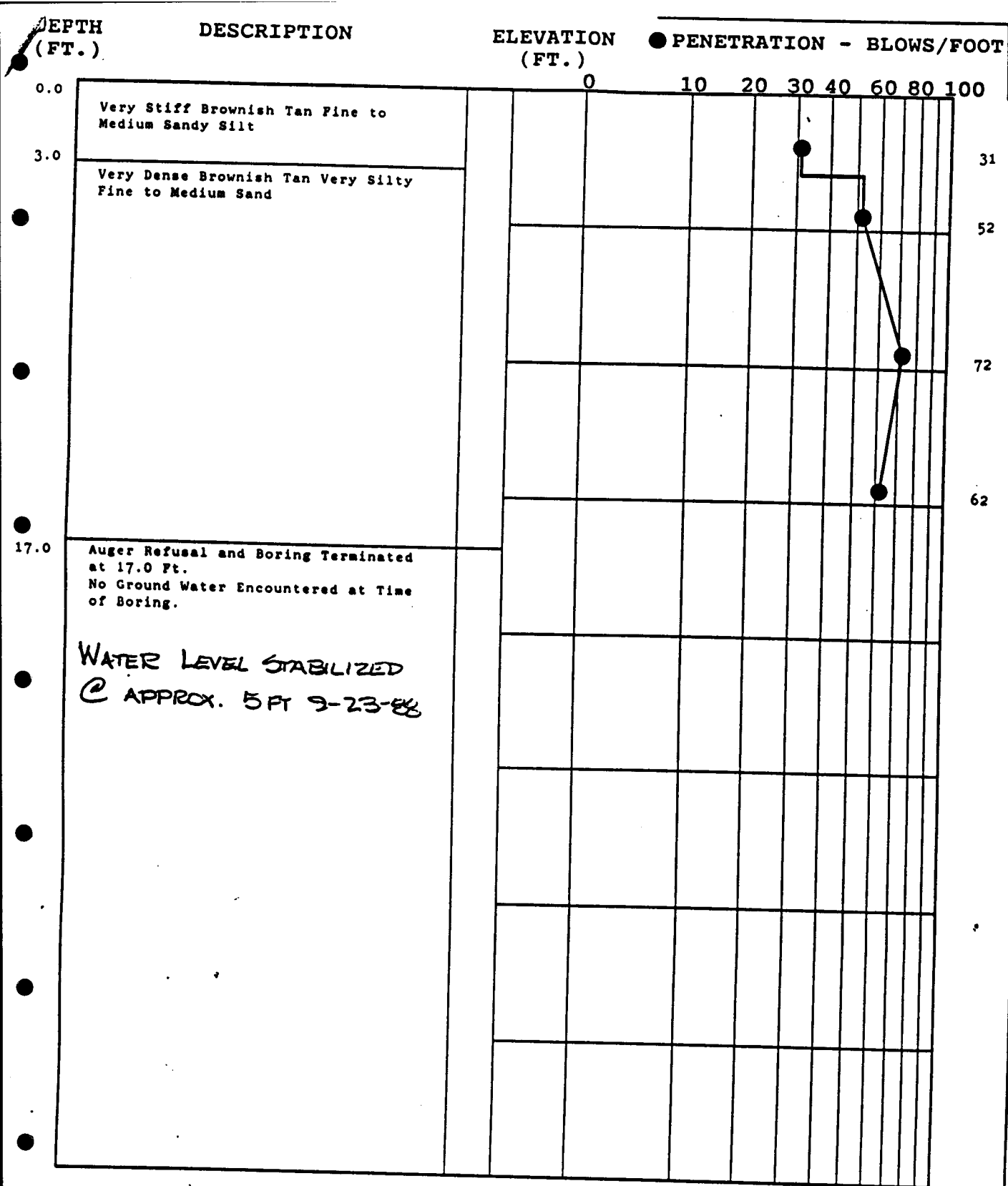
LAW ENGINEERING

Mark S. Adkins  
Drilling Department Manager

MSA:krh

P.O. BOX 11297  
CHARLOTTE, NC 28220  
501 MINUET LANE  
CHARLOTTE, NC 28217  
704-523-2022





### TEST BORING RECORD

BORING NUMBER B-2  
 DATE DRILLED 08-30-88  
 PROJECT NUMBER CH 6544  
 PROJECT N MECKLENBURG LANDFILL  
 PAGE 1 OF 1

▲ LAW ENGINEERING

SEE KEY SHEET FOR EXPLANATION OF  
 SYMBOLS AND ABBREVIATIONS USED ABOVE

DEPTH  
(FT.)

DESCRIPTION

ELEVATION  
(FT.)

● PENETRATION - BLOWS/FOOT

0 10 20 30 40 60 80 100

0.0

Auger Boring with No Sampling  
Cuttings Evidence of Light Brown  
Clayey Fine to Medium Sand

Moist Soils Below 10 Ft.

15.0

Boring Terminated at 15.0 Ft.  
Ground Water Encountered at 12.0 Ft  
Upon Completion of Boring.

W

TEST BORING RECORD

BORING NUMBER B-3  
DATE DRILLED 08-30-88  
PROJECT NUMBER CH 6544  
PROJECT N MECKLENBURG LANDFILL  
PAGE 1 OF 1

SEE KEY SHEET FOR EXPLANATION OF  
SYMBOLS AND ABBREVIATIONS USED ABOVE

▲ LAW ENGINEERING

## KEY TO CLASSIFICATIONS AND SYMBOLS

### CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

	<u>No. of Blows, N</u>	<u>Relative Density*</u>
Sands	0 - 4	Very Loose
	5 - 10	Loose
	11 - 20	Firm
	21 - 30	Very Firm
	31 - 50	Dense
	51+	Very Dense
		<u>Consistency*</u>
Silts and Clays	0 - 1	Very Soft
	2 - 4	Soft
	5 - 8	Firm
	9 - 15	Stiff
	16 - 30	Very Stiff
	31+	Hard

### SYMBOLS



- Undisturbed Sample (UD) Recovered

50=2"

- Number of Blows (50) to Drive the Spoon a Number of Inches (2)

BQ,NX,NQ,NW

- Core Barrel Sizes Which Obtain Cores 1-7/16, 2-1/8 Inches, 1-7/8 Inches, 2-1/16 Inches in Diameter, Respectively

65%

- Percentage (65) of Rock Core Recovered (Compared to Cored Length)

RQD

- Rock Quality Designation - Percentage of Recovered Cored Length Consisting of Moderately Hard or Better Core Segments 4 or More Inches Long



- Water Table Approximately 24 Hours or More After Drilling



- Water Table Approximately at Time of Drilling (Within 1 Hour)



- Loss of Drilling Fluid

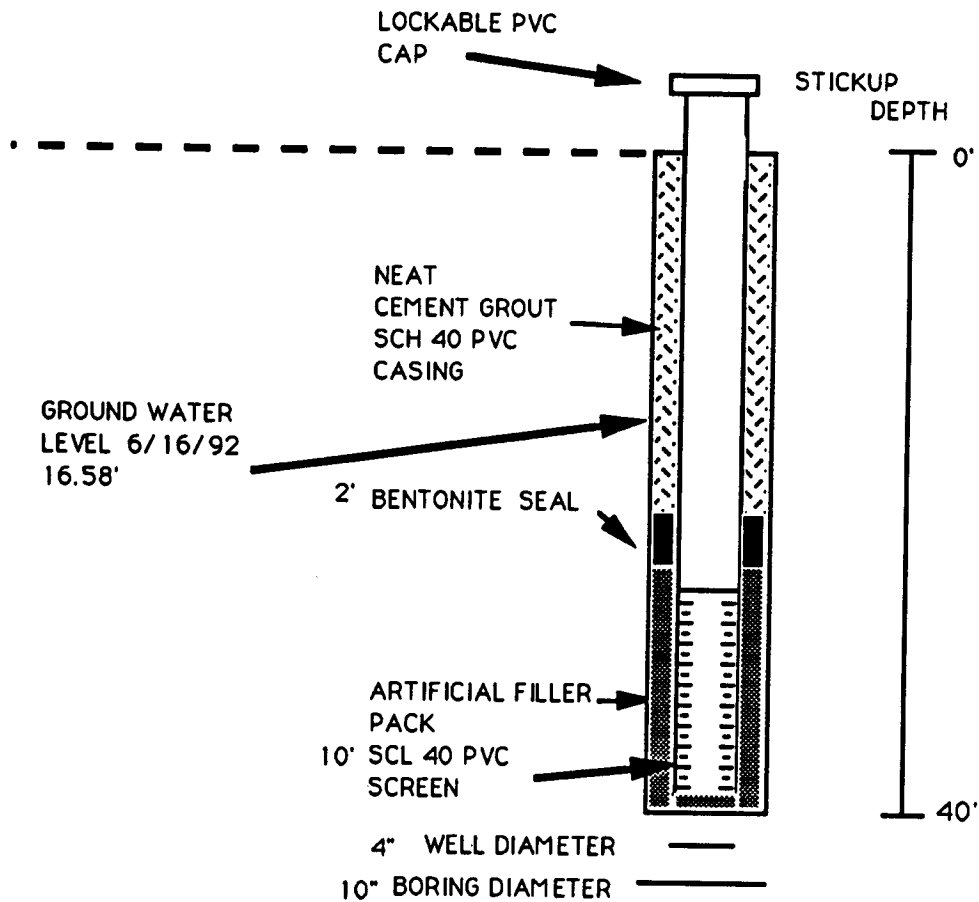
\*Terminology may be altered if presence of gravel, cobbles or boulders interferes with accurate measurement of standard penetration resistances

**APPENDIX B**

**MONITORING WELL INSTALLATION RECORDS**

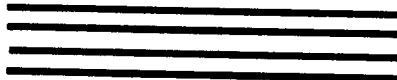


# MW-1 GROUND WATER MONITORING WELL CONSTRUCTION DETAILS



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

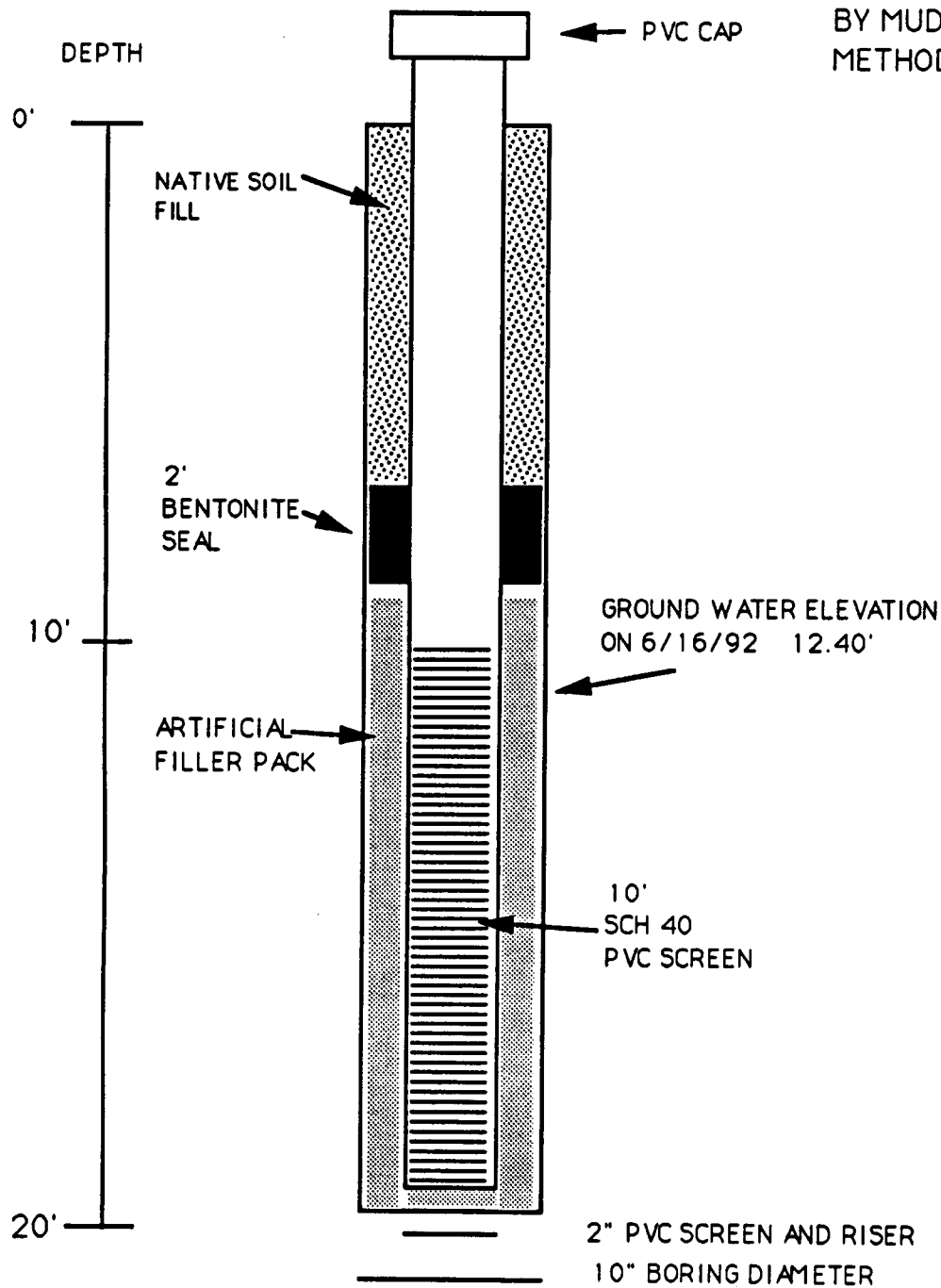
**ESI**   
ECOLOGICAL SERVICES, INC.

PERMINANT G.W. WELL  
CONSTRUCTION DETAILS  
MW-1  
LARRY GRIFFIN  
N. MECK. LANDFILL  
HUNTERVILLE, NC

# TEMPORARY GROUND WATER MONITORING WELL CONSTRUCTION DETAILS

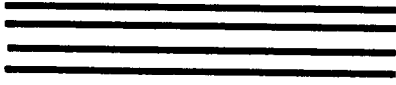
TW-2

TEMPORARY WELLS INSTALLED  
BY MUD ROTARY DRILLING  
METHOD



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

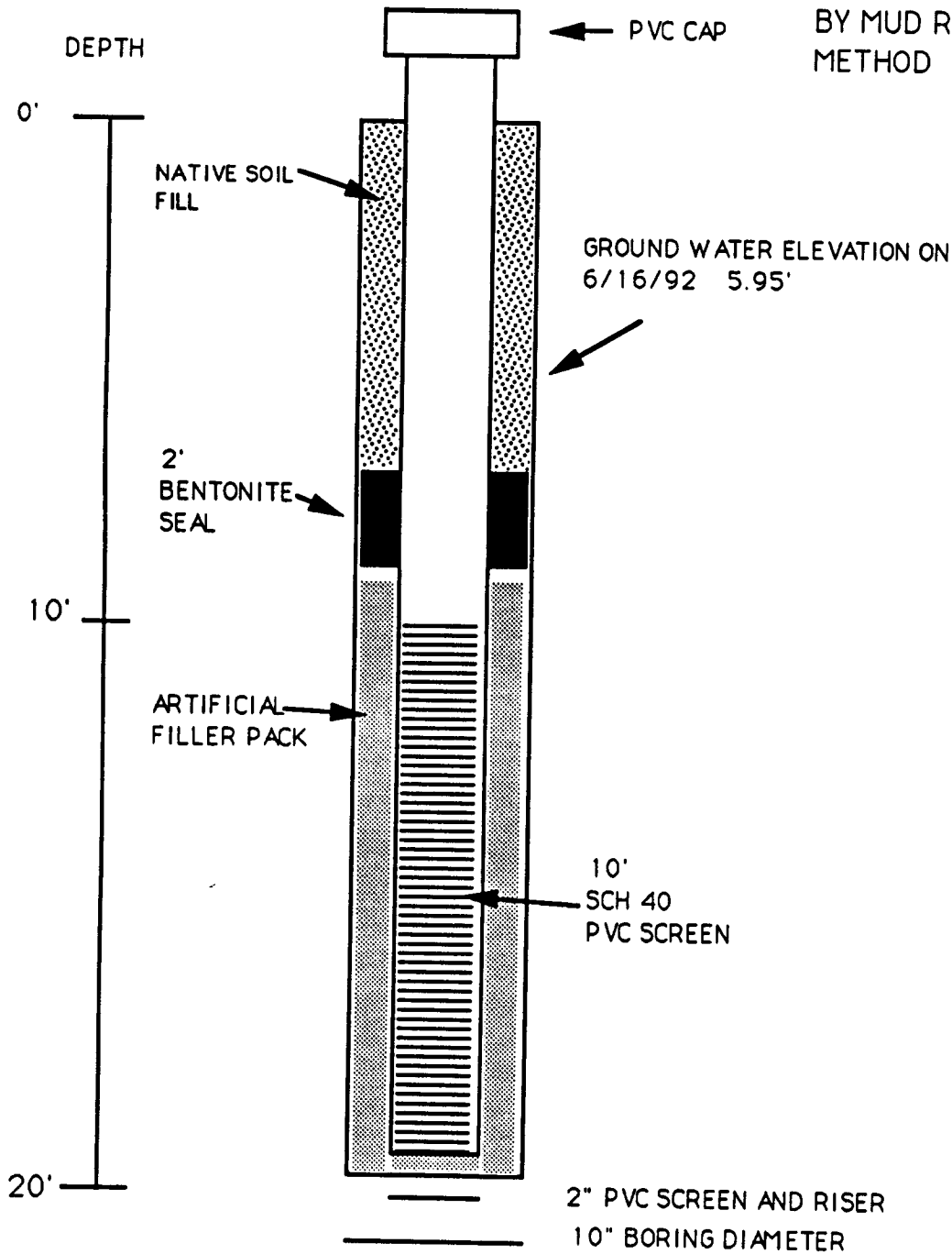
**ESI**   
ECOLOGICAL SERVICES, INC.

TEMPORARY WELL  
CONSTRUCTION DETAILS  
TW-2  
LARRY GRIFFIN  
N. MECK LANDFILL

# TEMPORARY GROUND WATER MONITORING WELL CONSTRUCTION DETAILS

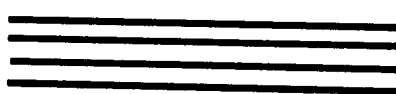
TW-3

TEMPORARY WELLS INSTALLED  
BY MUD ROTARY DRILLING  
METHOD



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

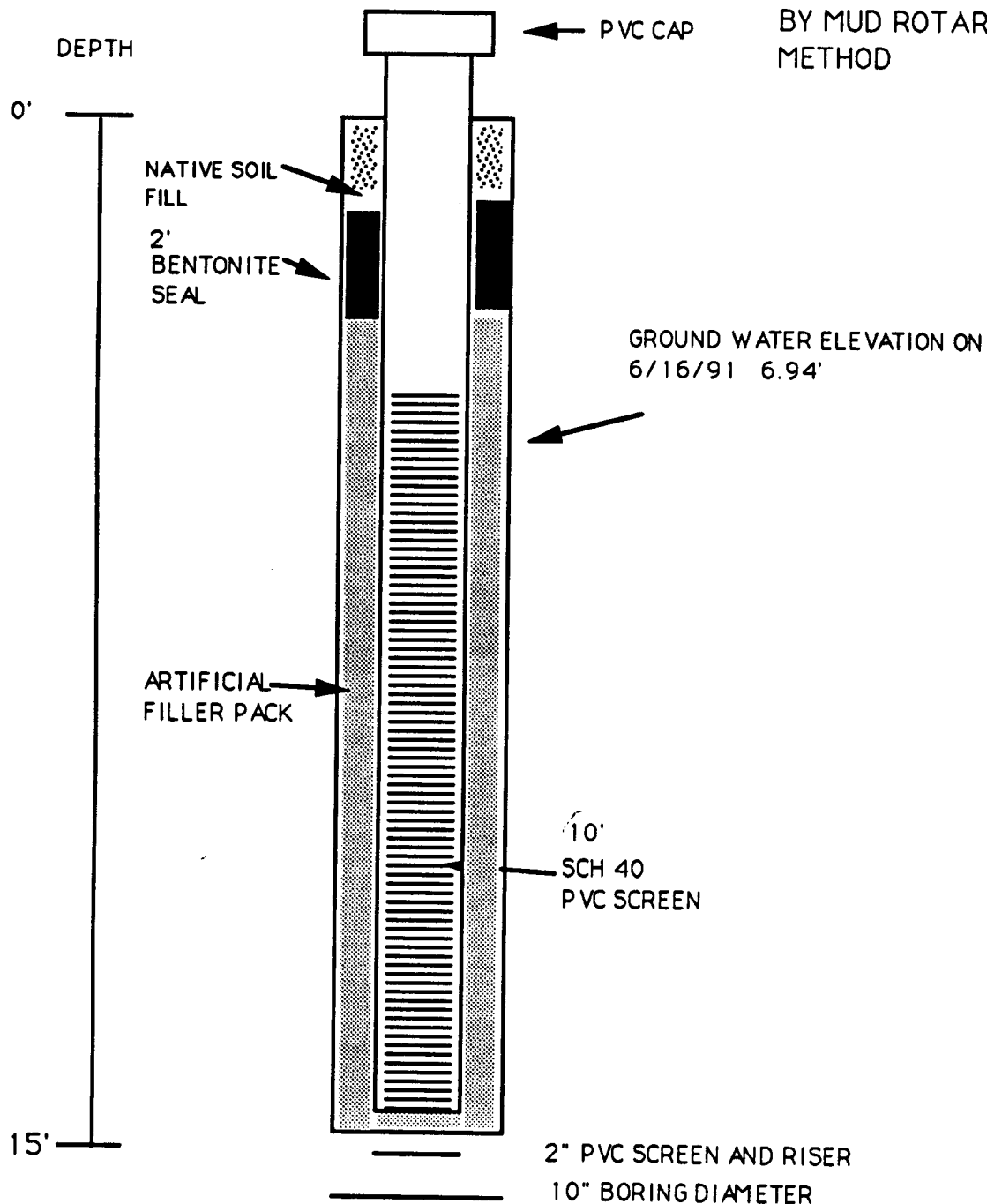
**ESI**   
ECOLOGICAL SERVICES, INC.

TEMPORARY WELL  
CONSTRUCTION DETAILS  
TW-3  
LARRY GRIFFIN  
N. MECK LANDFILL

# TEMPORARY GROUND WATER MONITORING WELL CONSTRUCTION DETAILS

TW-4

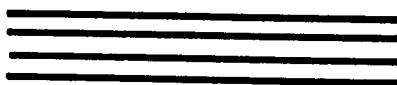
TEMPORARY WELLS INSTALLED  
BY MUD ROTARY DRILLING  
METHOD



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

ESI



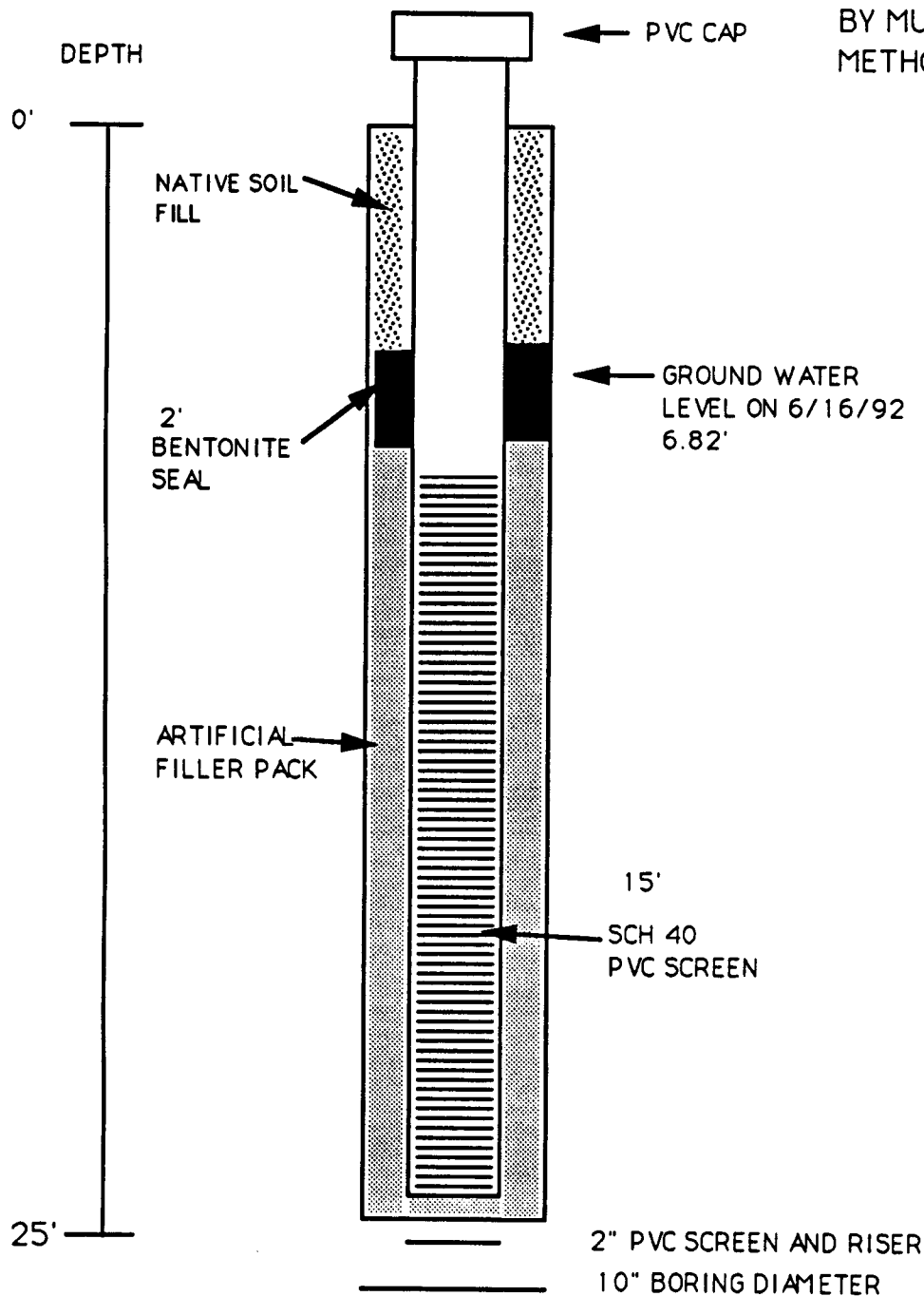
ECOLOGICAL SERVICES, INC.

TEMPORARY WELL  
CONSTRUCTION DETAILS  
TW-4  
LARRY GRIFFIN  
N. MECK LANDFILL

# TEMPORARY GROUND WATER MONITORING WELL CONSTRUCTION DETAILS

TW-5

TEMPORARY WELLS INSTALLED  
BY MUD ROTARY DRILLING  
METHOD



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

ESI

ECOLOGICAL SERVICES, INC.

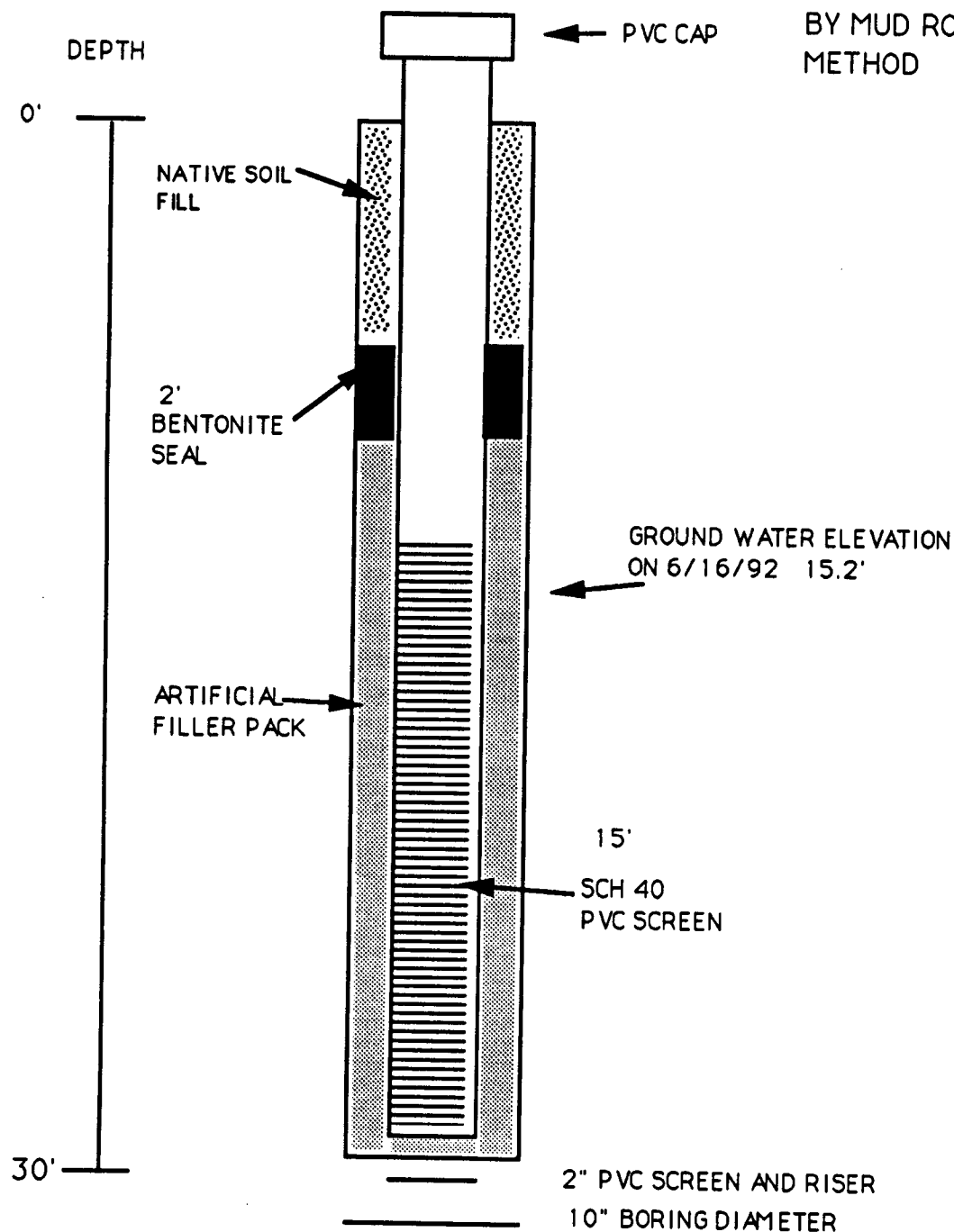
TEMPORARY WELL  
CONSTRUCTION DETAILS  
TW-5

LARRY GRIFFIN  
N. MECK LANDFILL

# TEMPORARY GROUND WATER MONITORING WELL CONSTRUCTION DETAILS

TW-6

TEMPORARY WELLS INSTALLED  
BY MUD ROTARY DRILLING  
METHOD



SCALE: ON DRAWING

DATE: JUNE, 15, 1992

ESI

ECOLOGICAL SERVICES, INC.

TEMPORARY WELL  
CONSTRUCTION DETAILS  
TW-6  
LARRY GRIFFIN  
N. MECK LANDFILL

**APPENDIX C**  
**LABORATORY RESULTS**  
**(COVER SOILS)**

June 9, 1992



**LAW ENGINEERING**

A MEMBER OF LAW  
COMPANIES GROUP

Ecological Services, Inc.  
1409 East Boulevard  
Charlotte, North Carolina 28220

Attention: Mr. Ron Gilkerson  
Senior Hydrogeologist

Subject: Report of Laboratory Testing  
Constant Head Permeability and  
Classification Tests  
Ecological Services, Inc.  
Charlotte, North Carolina  
LAW Job No. 226-09423-01

Gentlemen:

As authorized by the acceptance of our Work Authorization Sheet dated May 27, 1992, Law Engineering has completed requested laboratory testing on the three soil samples submitted to our laboratory on May 27, 1992 by Mr. Tom Whitehead. Testing was performed according to the appropriate sections of the following ASTM standards:

ASTM D 698	"Standard Test Method for Moisture Density Relations of Soils and Soil Aggregate Mixtures Using a 5.5lb (2.49kg) Rammer and 12 in (305mm) Drop"
ASTM D 5084	"Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter"
ASTM D 4318	"Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils"
ASTM D 422	"Standard Test Method for Particle-Size Analysis of Soils"

The results of our testing are summarized on the attached data sheets.

P.O. BOX 11297  
CHARLOTTE, NC 28220  
4333 WILMONT ROAD, SUITE 100  
CHARLOTTE, NC 28208  
704-357-8600  
FACSIMILE 704-357-8639



Ecological Services, Inc.  
LAW Job No. 226-09423-01  
June 9, 1992  
-2-

We appreciate the opportunity to be of service to you with this project. If you should have any questions concerning this report, or if we may be of further service to you, please do not hesitate to contact this office at (704) 357-8600.

Respectfully submitted,

*Carrie Y. Wallace*

Carrie Y. Wallace, C. E. T.  
Laboratory Services Supervisor

*Michael O. Hamlett*

Michael O. Hamlett, C. E. T.  
Laboratory Services Manager

CYW:MOH:kc

Attachment

LAW ENGINEERING

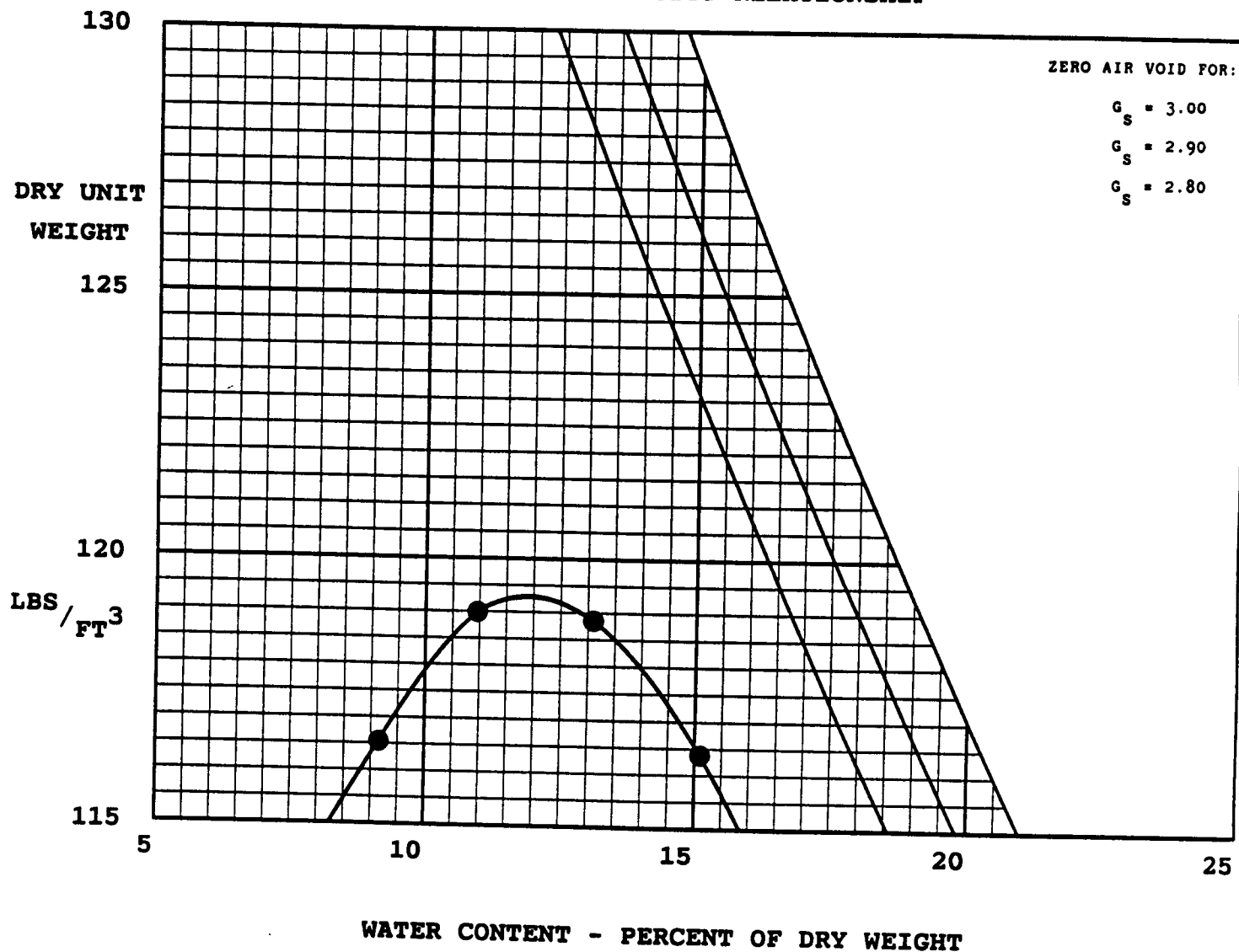
STANDARD PROCTOR REPORT  
ASTM-D 698

DATE: 5-27-92  
PROJECT NUMBER: 226-09423-01  
PROJECT NAME: ECOLOGICAL SERVICES, INC., B-1-A  
CLIENT: ECOLOGICAL SERVICES, INC.  
SAMPLE NUMBER: CURVE #1  
FIELD MOISTURE:

SOIL DESCRIPTION:  
OLIVE GREEN MICACEOUS SILTY FINE TO COARSE SAND  
PROPOSED USE:

SOURCE LOCATION:

MOISTURE - DENSITY RELATIONSHIP



OPTIMUM MOISTURE CONTENT 11.9

MAXIMUM DRY DENSITY 119.3

**LAW ENGINEERING**

**PROCTOR REPORT**

DATE: 5-27-92  
PROJECT NUMBER: 226-09423-01  
PROJECT NAME: ECOLOGICAL SERVICES, INC., B-1-A  
CLIENT: ECOLOGICAL SERVICES, INC.  
SAMPLE NUMBER: CURVE #1  
PROCTOR TYPE: STANDARD ASTM-D 698  
WEIGHT OF MOLD: 4213.00 grams  
MOLD FACTOR: 30.02000  
FIELD MOISTURE:  
NUMBER OF POINTS: 4

**SOIL DESCRIPTION:**

OLIVE GREEN MICACEOUS SILTY FINE TO COARSE SAND  
PROPOSED USE:

**SOURCE LOCATION:**

**PROCTOR READINGS**

NUMBER	WET SOIL & TARE	DRY SOIL & TARE	TARE	SOIL & MOLD WEIGHT
1	500.00	458.10	0.00	6135.00
2	500.00	450.60	0.00	6208.00
3	500.00	442.10	0.00	6244.00
4	500.00	434.40	0.00	6237.00

**PROCTOR RESULTS**

NUMBER	MOISTURE CONTENT	DRY DENSITY
1	9.1	116.5
2	11.0	119.0
3	13.1	118.9
4	15.1	116.4

# LAW ENGINEERING

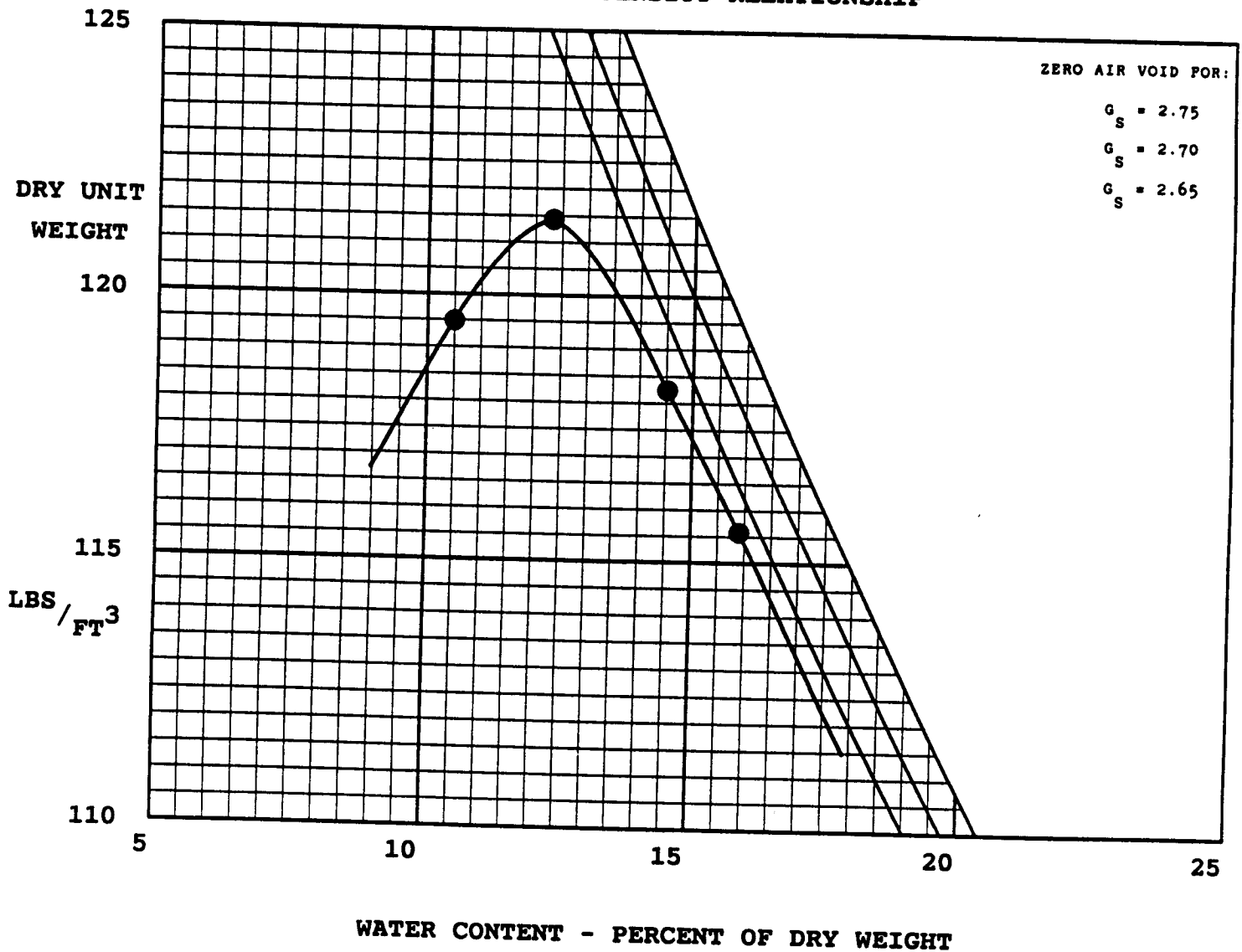
## STANDARD PROCTOR REPORT ASTM-D 698

DATE: 5-27-92  
PROJECT NUMBER: 226-09423-01  
PROJECT NAME: ECOLOGICAL SERVICES, INC., B-2-A  
CLIENT: ECOLOGICAL SERVICES, INC.  
SAMPLE NUMBER: CURVE #2  
FIELD MOISTURE:

SOIL DESCRIPTION:  
TAN BROWN MICACEOUS SILTY FINE TO COARSE SAND  
PROPOSED USE:

SOURCE LOCATION:

### MOISTURE - DENSITY RELATIONSHIP



OPTIMUM MOISTURE CONTENT 12.3

MAXIMUM DRY DENSITY 121.4

**LAW ENGINEERING**

**PROCTOR REPORT**

DATE: 5-27-92  
PROJECT NUMBER: 226-09423-01  
PROJECT NAME: ECOLOGICAL SERVICES, INC., B-2-A  
CLIENT: ECOLOGICAL SERVICES, INC.  
SAMPLE NUMBER: CURVE #2  
PROCTOR TYPE: STANDARD ASTM-D 698  
WEIGHT OF MOLD: 4213.00 grams  
MOLD FACTOR: 30.02000  
FIELD MOISTURE:  
NUMBER OF POINTS: 4

**SOIL DESCRIPTION:**

TAN BROWN MICACEOUS SILTY FINE TO COARSE SAND  
PROPOSED USE:

**SOURCE LOCATION:**

**PROCTOR READINGS**

NUMBER	WET SOIL & TARE	DRY SOIL & TARE	TARE	SOIL & MOLD WEIGHT
1	500.00	452.50	0.00	6208.00
2	500.00	445.10	0.00	6274.00
3	500.00	436.60	0.00	6259.00
4	500.00	431.40	0.00	6237.00

**PROCTOR RESULTS**

NUMBER	MOISTURE CONTENT	DRY DENSITY
1	10.5	119.5
2	12.3	121.4
3	14.5	118.2
4	15.9	115.6

LAW ENGINEERING

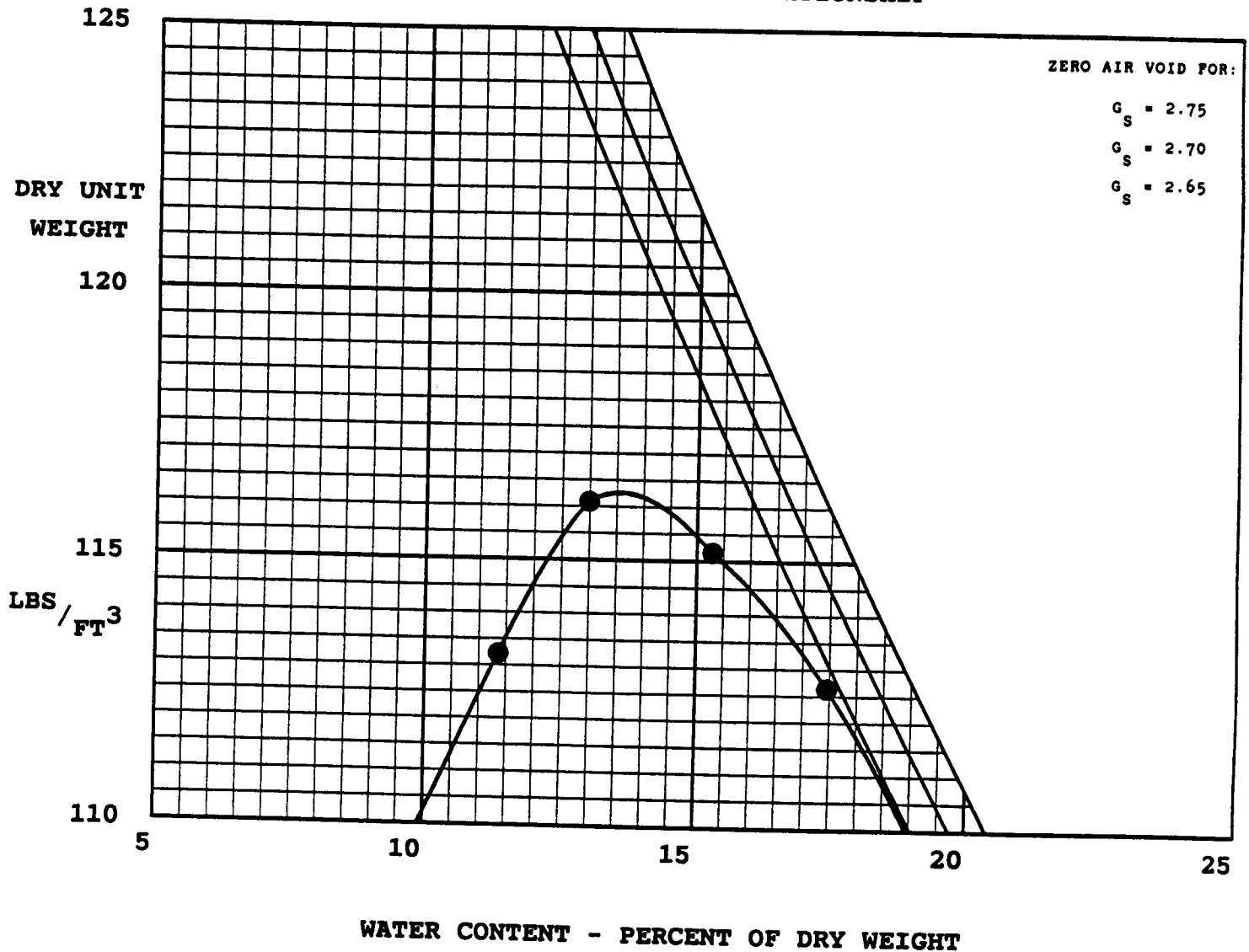
STANDARD PROCTOR REPORT  
ASTM-D 698

DATE: 5-27-92  
PROJECT NUMBER: 226-09423-01  
PROJECT NAME: ECOLOGICAL SERVICES, INC. - B-3-A  
CLIENT: ECOLOGICAL SERVICES, INC.  
SAMPLE NUMBER: CURVE #3  
FIELD MOISTURE:

SOIL DESCRIPTION:  
TAN BROWN SLIGHTLY MICACEOUS FINE TO MEDIUM SANDY SILT  
PROPOSED USE:

SOURCE LOCATION:

MOISTURE - DENSITY RELATIONSHIP



OPTIMUM MOISTURE CONTENT 13.6

MAXIMUM DRY DENSITY 116.3

**LAW   ENGINEERING**

**PROCTOR REPORT**

**DATE:** 5-27-92  
**PROJECT NUMBER:** 226-09423-01  
**PROJECT NAME:** ECOLOGICAL SERVICES, INC. - B-3-A  
**CLIENT:** ECOLOGICAL SERVICES, INC.  
**SAMPLE NUMBER:** CURVE #3  
**PROCTOR TYPE:** STANDARD    ASTM-D 698  
**WEIGHT OF MOLD:** 4213.00 grams  
**MOLD FACTOR:** 30.02000  
**FIELD MOISTURE:**  
**NUMBER OF POINTS:** 4

**SOIL DESCRIPTION:**

TAN BROWN SLIGHTLY MICACEOUS FINE TO MEDIUM SANDY SILT  
**PROPOSED USE:**

**SOURCE LOCATION:**

**PROCTOR READINGS**

NUMBER	WET SOIL & TARE	DRY SOIL & TARE	TARE	SOIL & MOLD WEIGHT
1	500.00	449.00	0.00	6118.00
2	500.00	442.50	0.00	6195.00
3	500.00	433.70	0.00	6219.00
4	500.00	425.70	0.00	6212.00

**PROCTOR RESULTS**

NUMBER	MOISTURE CONTENT	DRY DENSITY
1	11.4	113.2
2	13.0	116.1
3	15.3	115.2
4	17.5	112.6

## SUMMARY OF LABORATORY TESTING

Ecological Services, Inc.  
LAW Job No. 226-09423-01

### CONSTANT HEAD PERMEABILITY TEST

- I. Date of Test: May 27-June 4, 1992
- II. Test Location: B1-A
- III. Material Description: Olive Green Micaceous Silty Fine to Coarse Sand
- IV. Material Condition: Bulk
- V. Proctor Data:  
Maximum Dry Density (pcf): 119.3  
Optimum Moisture Content (%): 11.9
- VI. Test Data:
- |  |                      |
|--|----------------------|
| Dry Density (pcf):   | 113.3                |
| Initial Moisture Content (%):                                | 14.6                 |
| Final Moisture Content (%):                                  | 16.6                 |
| Sample Length (cm):  | 5.10                 |
| Sample Area (cm <sup>2</sup> ):                              | 41.91                |
| Head (cm):   | 140.68               |
| Quantity of Water Passing Through Sample (cm <sup>3</sup> ): | 145.2                |
| Elapsed Time (sec):  | 2640                 |
| Temperature (°F):  | 73                   |
| Viscosity Correction Factor:                                 | 1                    |
| Coefficient of Permeability -k (cm/sec):                     | $4.8 \times 10^{-5}$ |
- VII. Comments: Sample tested in accordance with ASTM D5084 Method A with the exception that the sample was not consolidated prior to testing.



## SUMMARY OF LABORATORY TESTING

Ecological Services, Inc.  
LAW Job No. 226-09423-01

### CONSTANT HEAD PERMEABILITY TEST

- I. Date of Test: May 27-June 4, 1992
- II. Test Location: B2-A
- III. Material Description: Tan Brown Micaceous Silty Fine to Coarse Sand
- IV. Material Condition: Bulk
- V. Proctor Data:  
Maximum Dry Density (pcf): 121.4  
Optimum Moisture Content (%): 12.3

VI. Test Data:

Dry Density (pcf):	115.3
Initial Moisture Content (%):	13.3
Final Moisture Content (%):	15.7
Sample Length (cm):	5.13
Sample Area (cm <sup>2</sup> ):	41.91
Head (cm):	140.68
Quantity of Water Passing Through Sample (cm <sup>3</sup> ):	63.0
Elapsed Time (sec):	3540
Temperature (°F):	73
Viscosity Correction Factor:	1
Coefficient of Permeability -k (cm/sec):	$1.5 \times 10^{-5}$

- VII. Comments: Sample tested in accordance with ASTM D5084 Method A with the exception that the sample was not consolidated prior to testing.

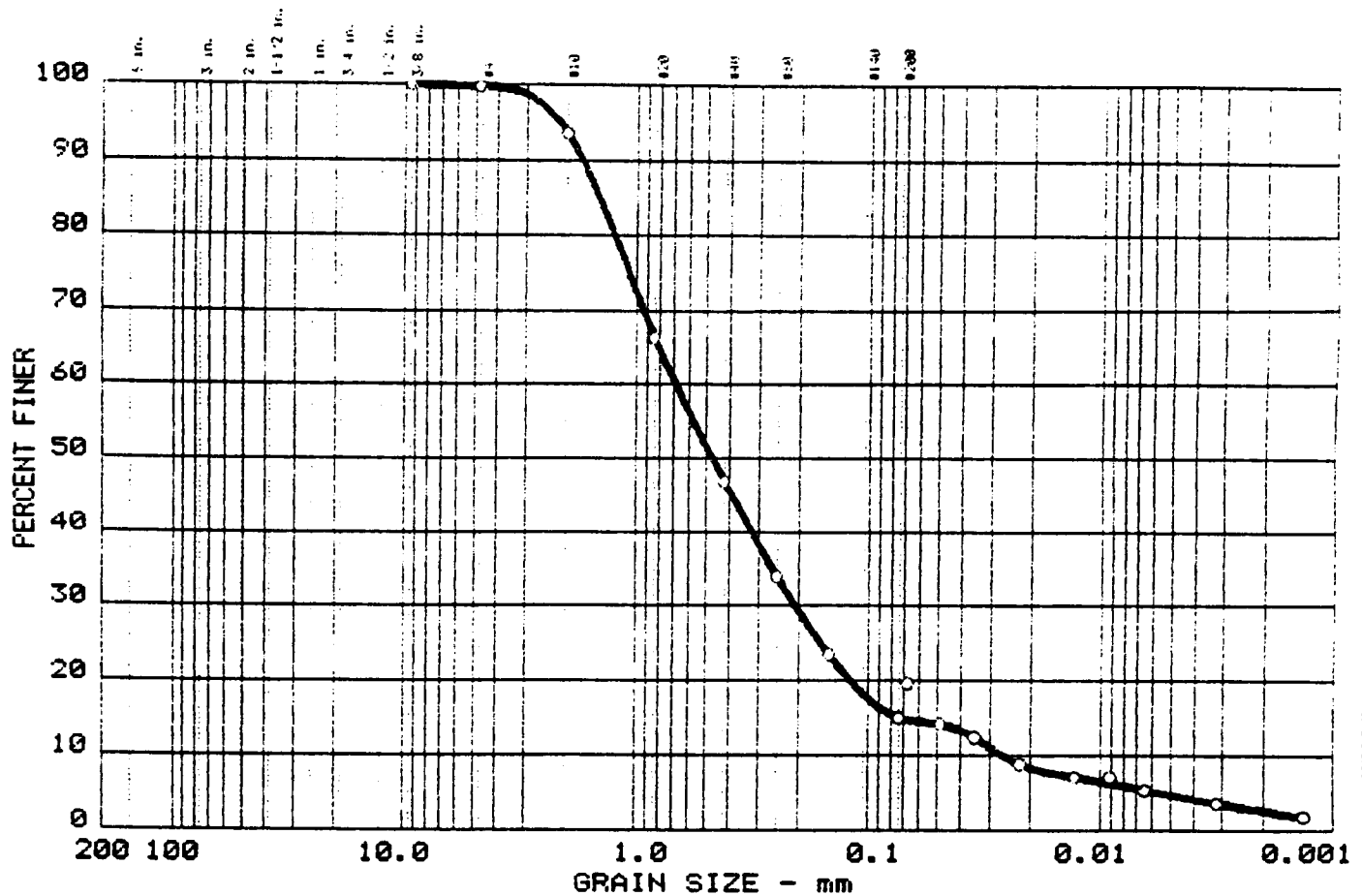
## SUMMARY OF LABORATORY TESTING

Ecological Services, Inc.  
LAW Job No. 226-09423-01

### CONSTANT HEAD PERMEABILITY TEST

- I. Date of Test: May 27-June 4, 1992
- II. Test Location: B3-A
- III. Material Description: Tan Brown Slightly Micaceous Fine to Medium Sandy Silt
- IV. Material Condition: Bulk
- V. Proctor Data:  
Maximum Dry Density (pcf): 116.3  
Optimum Moisture Content (%): 13.6
- VI. Test Data:
- |  |                      |
|--|----------------------|
| Dry Density (pcf):   | 110.5                |
| Initial Moisture Content (%):                                | 14.9                 |
| Final Moisture Content (%):                                  | 18.9                 |
| Sample Length (cm):  | 5.08                 |
| Sample Area (cm <sup>2</sup> ):                              | 41.91                |
| Head (cm):   | 140.68               |
| Quantity of Water Passing Through Sample (cm <sup>3</sup> ): | 107.2                |
| Elapsed Time (sec):  | 3660                 |
| Temperature (°F):  | 73                   |
| Viscosity Correction Factor:                                 | 1                    |
| Coefficient of Permeability -k (cm/sec):                     | $2.5 \times 10^{-5}$ |
- VII. Comments: Sample tested in accordance with ASTM D5084 Method A with the exception that the sample was not consolidated prior to testing.

# GRAIN SIZE DISTRIBUTION TEST REPORT



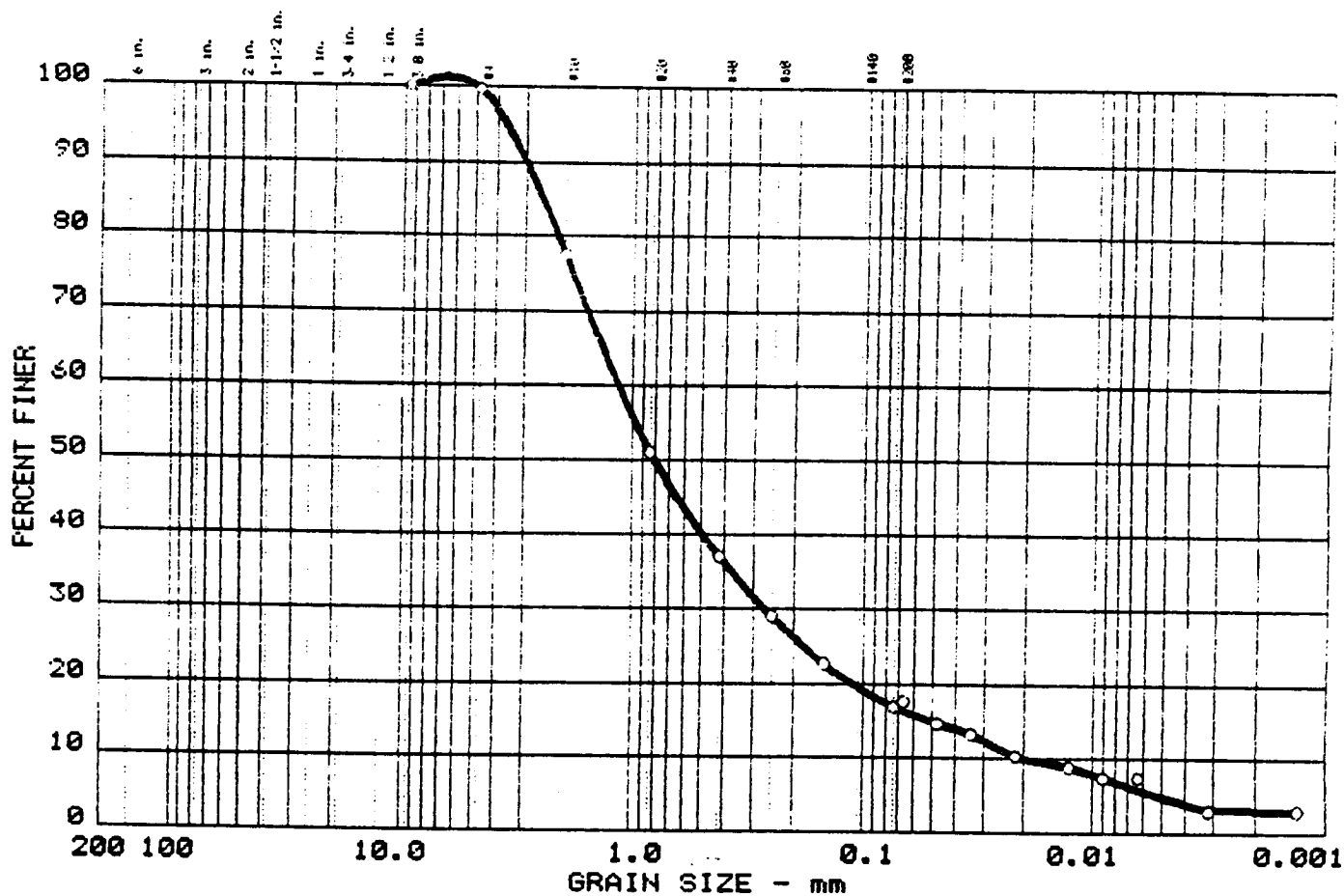
%+75	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.2	84.7	10.4	4.7

LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
0	0	1.45	0.68	0.47	0.207	0.0734	0.0257	2.43	26.6

MATERIAL DESCRIPTION	USCS	AASHTO
	SM	

Project No.: 226-09423-01 Project: ECOLOGICAL SERVICES, INC. Location: B1-A  Date: JUNE 9, 1992  <div style="text-align: center;"> <b>GRAIN SIZE DISTRIBUTION TEST REPORT</b>  <b>LAW ENGINEERING</b> </div>	Remarks:      Figure No.
--	--

# GRAIN SIZE DISTRIBUTION TEST REPORT



%+75	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.3	82.7	12.2	4.8

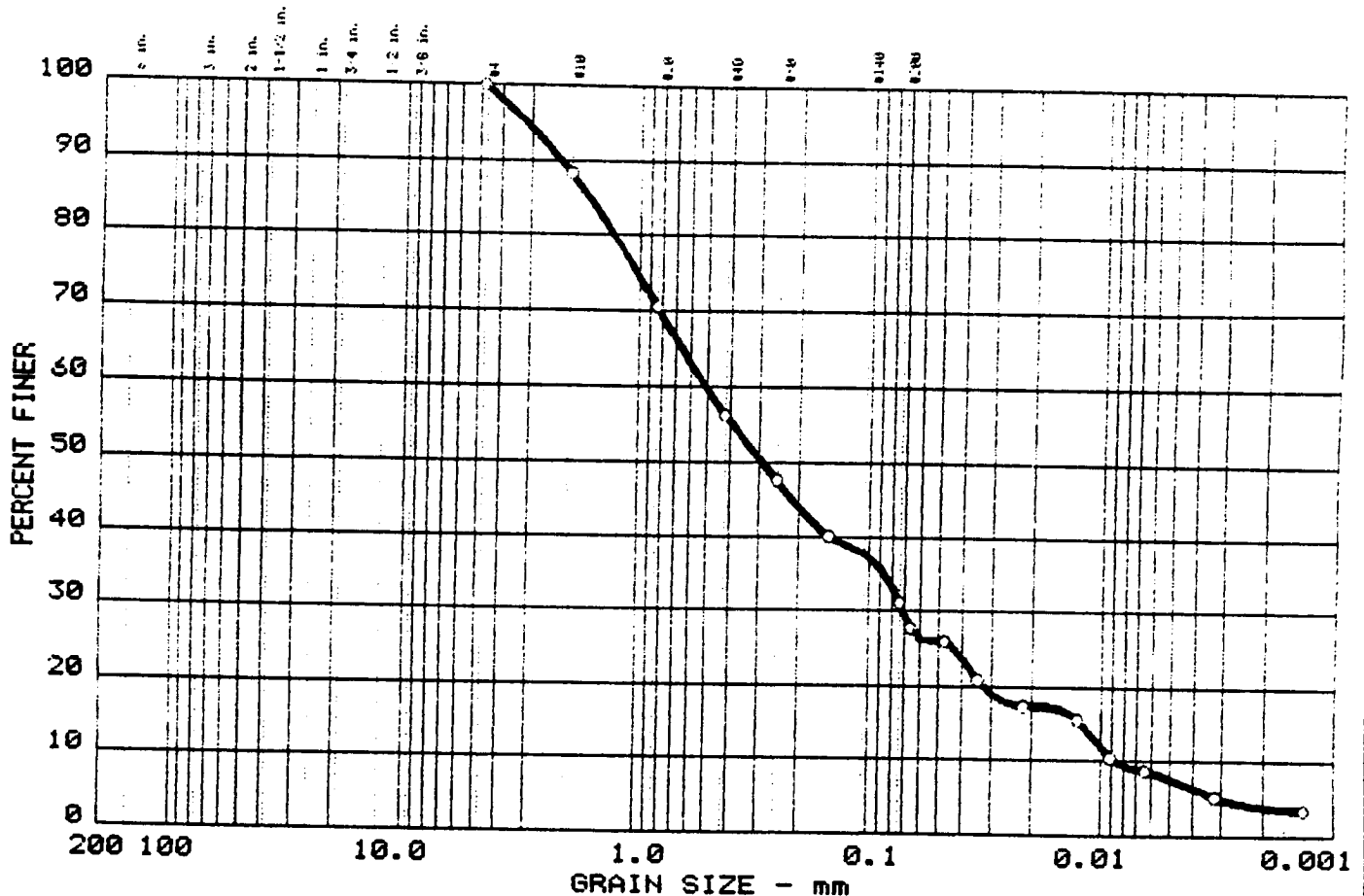
LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
0	0	2.51	1.16	0.80	0.265	0.0511	0.0194	3.13	59.6

MATERIAL DESCRIPTION	USCS	AASHTO
	SM	

Project No.: 226-09423-01  
 Project: ECOLOGICAL SERVICES, INC.  
 Location: B2-A  
  
 Date: JUNE 9, 1992  
  
 GRAIN SIZE DISTRIBUTION TEST REPORT  
 LAW ENGINEERING

Remarks:  
  
  
  
  
 Figure No.

# GRAIN SIZE DISTRIBUTION TEST REPORT



%+75 <sub>μ</sub>	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	68.9	23.5	7.6

LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
0	0	1.66	0.51	0.29	0.072	0.0120	0.0087	1.16	58.2

MATERIAL DESCRIPTION	USCS	AASHTO
	SM	

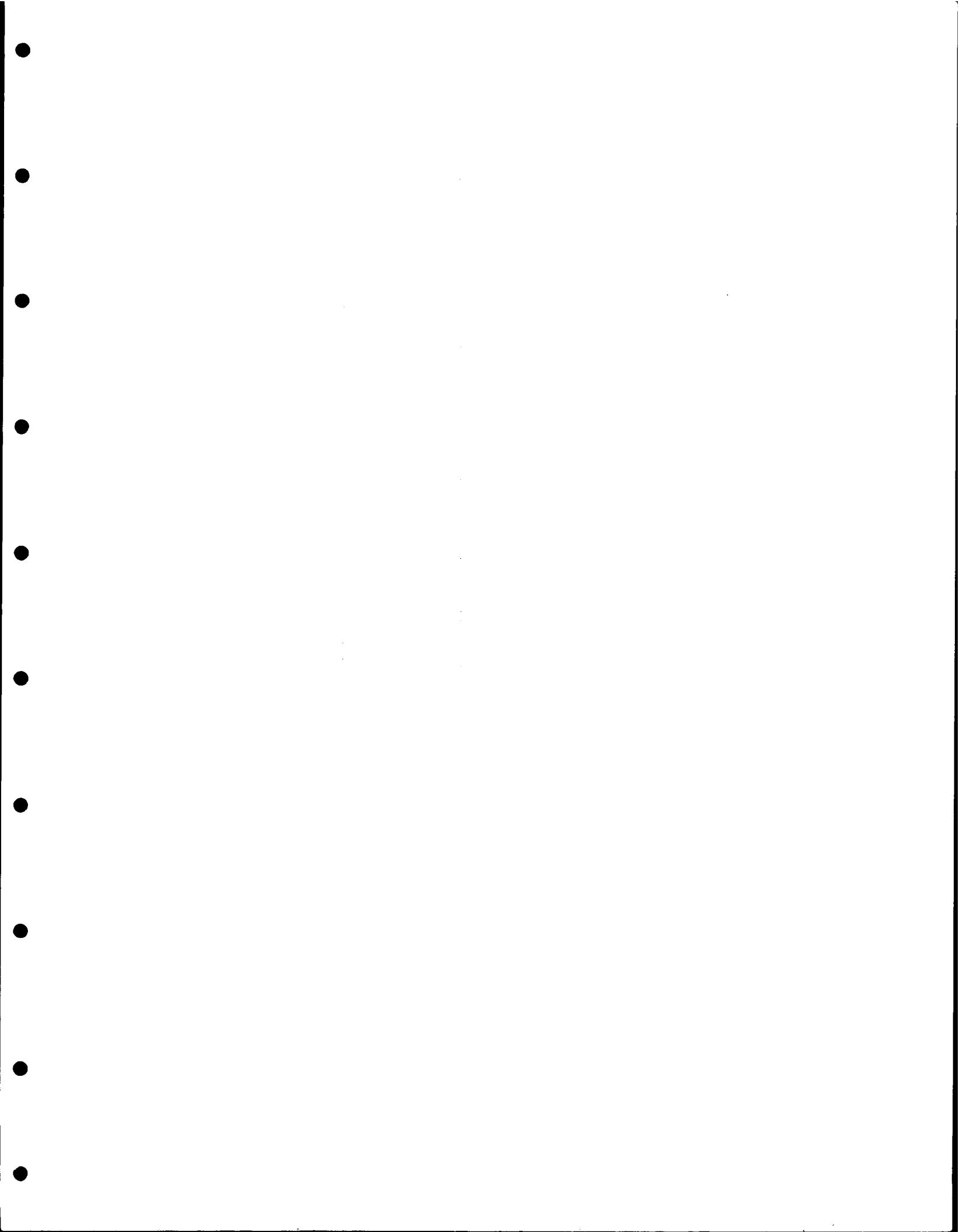
Project No.: 226-09423-01  
 Project: ECOLOGICAL SERVICES, INC.  
 Location: B-3A

Date: JUNE 9, 1992

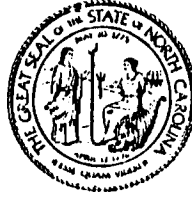
GRAIN SIZE DISTRIBUTION TEST REPORT  
 LAW ENGINEERING

Remarks:

Figure No.







State of North Carolina  
Department of Environment, Health, and Natural Resources

512 North Salisbury Street • Raleigh, North Carolina 27604

James B. Hunt, Jr., Governor

**SOLID WASTE MANAGEMENT DIVISION**  
TELEPHONE: (919) 733-0692

Jonathan B. Howes, Secretary

June 24, 1993

Mr. Larry Griffin  
19141 Highway 73 West  
Huntersville, North Carolina 28078

and

Mr. O.L. Parker  
15300 Holbrooks Road  
Huntersville, North Carolina 28078

Re: Solid Waste Permit No. 60-13  
North Mecklenburg Landfill  
Mecklenburg County

Dear Mr. Griffin and Mr. Parker:

The referenced permit is issued in accordance with N.C.G.S. 130A-294 and the N.C. Solid Waste Management Rules, 15A NCAC 13B. The approved facility description includes the area described in the attached legal description (Document 3 of the approved plan). Within the approved facility, the area permitted for disposal comprises only the approximately eight acre area shown on sheet 3, Document 1 of the approved plans in the detail entitled Plan Showing Finish Grade Elev. This permit is for a five year period or until North Mecklenburg exhausts the capacity of the approximately eight acre area described above, whichever occurs first. At that time, the landfill owners may apply for an expansion but will be subject to all rules in effect at that time. Attachment 1 lists those documents included in the Approved Plan. This permit is issued to Larry Griffin and O.L. Parker as the owners and operators of the facility.

Please refer to the GENERAL Conditions of this permit for recordation procedures, the definition of the approved plan, and for general terms of the Solid Waste Permit. The CONSTRUCTION AND OPERATION conditions describe permitted fill areas, acceptable waste types, landfill operation, and requirements which must be satisfied prior to operation of the facility as a Construction & Demolition landfill. Specific requirements for groundwater



monitoring and facility record keeping and reporting are described in the MONITORING AND REPORTING conditions.

Please review the Conditions of Permit thoroughly, especially the following specific conditions:

- General Condition No. 7 which notifies you that it is the responsibility of the applicant to obtain any and all permits and approvals necessary for the development of this project prior to the commencement of construction activities which may include General or Individual NPDES Stormwater Discharge approval from the North Carolina Division of Environmental Management (DEM) in accordance with 15A NCAC 2H.1000;

Please contact the DEM central office in Raleigh at 733-5083 for more information pertaining to stormwater discharge rules;

- Monitoring and Reporting Requirement No. 1.e which requires that the groundwater quality monitoring wells must be installed and sampled prior to accepting waste at this landfill.

Please consult with Mr. Bobby Lutfy, Solid Waste Section Hydrogeologist at (919) 733-0692 just prior to well construction to help ensure that completed wells meet well construction standards and will be acceptable for monitoring purposes. Enclosed as Attachment 2 is a copy of the "North Carolina Water Quality Monitoring Guidance Document For Solid Waste Facilities;" and

- Monitoring and Reporting Requirement No. 3 which requires the landfill owners to record of the amount of solid waste received at the facility using Landfill Scales and to compile the records on a monthly basis.

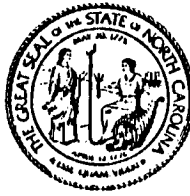
Again, please review the Conditions of Permit thoroughly and contact me if you have any questions or if you require further clarification. Mr. Rick Doby is the Section's Waste Management Specialist for this area and can be contacted at DEHNR Mooresville Regional Office, 919 North Main Street, Mooresville, NC 28115 or by phone at (704) 663-1699.

Respectfully,

*Ellis Cayton*  
Ellis Cayton, P.E.  
Solid Waste Section

enclosure

cc: Larry Griffin  
Ron Gilkerson  
John Gibson  
Julian Foscue  
Rick Doby



State of North Carolina  
Department of Environment, Health, and Natural Resources  
512 North Salisbury Street • Raleigh, North Carolina 27604

James B. Hunt, Jr., Governor

**SOLID WASTE MANAGEMENT DIVISION**  
TELEPHONE: (919) 733-0692

Jonathan B. Howes, Secretary

**June 24, 1993**

**SOLID WASTE PERMIT NO. 60-13**

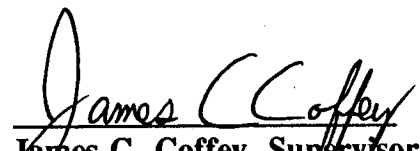
**Mr. Larry A. Griffin and Mr. O.L. Parker**

**are hereby issued a permit to construct and operate a**

**Construction and Demolition Landfill**

**on Holbrooks Road southeast of Huntersville  
in Mecklenburg County, North Carolina**

**in accordance with Article 9, Chapter 130A, of the General Statutes  
of North Carolina and all rules promulgated thereunder and subject to the  
conditions set forth in this permit.**

  
**James C. Coffey, Supervisor**  
**Permitting Branch**  
**Solid Waste Section**

PERMIT NO. 60-13  
DATE ISSUED 06-24-93

**SOLID WASTE PERMIT**  
Permit to Construct and Operate  
North Mecklenburg, Inc.  
Construction and Demolition Debris Landfill

**CONDITIONS OF PERMIT:**

**GENERAL**

1. This permit shall not be effective unless the certified copy is filed in the Register of Deeds Office, in the grantor index under the name of the owner of the land in the county or counties in which the land is located. After recordation, the certified copy shall be returned to the Solid Waste Section and shall have indicated on it the page and book number, date of recordation, and the Register's seal.
2. When this property is sold, leased, conveyed or transferred, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument, a statement that the property has been used as a sanitary landfill.
3. This permit will be subject to review every five years as per 15A NCAC 13B .0201(c), according to the issuance date of this permit. Modifications to the facility may be required in accordance with rules in effect at the time of review.
4. The approved plan is described by Attachment 1, "List of Documents for Approved Plan". Where discrepancies may exist, the most recent submittal and the Conditions of Permit shall govern. Some components of the approved plan are reiterated in the Conditions of Permit.
5. This permit is not transferable.
6. A copy of this permit and the approved plans shall be maintained at the facility.
7. The applicant is responsible for obtaining any and all permits and approvals necessary for the development of this project prior to the commencement of construction activities including approval from appropriate agencies for a General or Individual NPDES Stormwater Discharge Permit.

Post-It™ brand fax transmittal memo 7671		# of pages ▶ 13
To Donna Cesate	From Michelle Hinton	
Co.	Co. SWS/Permitting/Env. Affs	
Dept.	Phone # (919) 733-0692 x. 326	
Fax # 204-596-8959	Fax # (919) 733-4910	

**CONSTRUCTION AND OPERATION**

1. This permit is for development of the North Mecklenburg Landfill within the approved facility description in Document 3 of the approved plan. Within the approved facility, the area permitted for disposal comprises only the approximately eight acre area shown on sheet 3, Document 1 of the approved plans in the detail entitled Plan Showing Finish Grade Elev. This permit is for a five year period or until North Mecklenburg exhausts the capacity of the approximately eight acre area described above, whichever occurs first.
2. This solid waste management facility is permitted to receive the following waste types:
  - a. Land-clearing debris as defined in G.S. 130A-290, specifically, solid waste which is generated solely from land-clearing activities, such as stumps, trees, etc.;
  - b. Inert debris defined as solid waste which consists solely of material that is virtually inert, such as brick, concrete, rock and clean soil; and
  - c. Asphalt in accordance with G.S. 130-294(m).
  - d. Construction and demolition debris defined as solid waste resulting solely from construction, remodeling, repair or demolition operations on pavement, buildings, or other structures.

Yard trash as defined in G.S. 130A-290, shall not be disposed in the landfill area.
3. The North Mecklenburg Landfill owners shall maintain a minimum buffer of at least 75 feet between waste disposal areas and streams.
4. All sedimentation/erosion control activities will be conducted in accordance with the Sedimentation Control Act codified at 15 NCAC 4. Native vegetation shall be established on the completed landfill.
5. The following requirements shall be met prior to operation of this facility:
  - a. Site preparation shall be in accordance with the construction plan, and the conditions specified herein.
  - b. Site inspection shall be made by a representative of the Division of Solid Waste Management (DSWM).
  - c. Signs shall be posted at the facility in accordance with the Access and Safety Requirements under Operation Condition No. 5 listed below.
  - d. Groundwater monitoring wells (see Monitoring and Reporting Requirements) shall be installed in accordance with the approved groundwater monitoring plan. A baseline sampling for water quality shall be performed. Well construction records and sample analysis results shall be submitted to the Section Hydrogeologist for review and approval prior to operation of the facility as a C&D landfill.

- e. Recordation procedures for the permit shall be implemented as described above in General Conditions Numbers 1 and 2.
6. Operation of the C&D landfill units shall conform to the operating procedures described in the approved plan, in accordance with Section .0505 of the Solid Waste Management Rules, and in accordance with the following requirements:

Waste Acceptance and Disposal

- a. The facility shall accept only those solid wastes which it is permitted to receive.
- b. No municipal solid waste, hazardous waste, or liquid waste shall be accepted for disposal.
- c. The permittee shall implement a program at the facility for detecting and preventing the disposal of MSW, hazardous or liquid wastes. The program shall include, at a minimum:
  - (i) Random inspections of incoming loads or other comparable procedures;
  - (ii) Records of any inspections;
  - (iii) Training of personnel to recognize hazardous and liquid wastes;
  - (iv) Development of a contingency plan to properly manage any identified hazardous, liquid or MSW wastes; The plan must address identification, removal, storage, and final disposition of waste.

Cover Material Requirements

- a. Operational soil cover of at least six inches shall be placed at least once per week.
- b. Areas which will not have additional waste placed on them for 12 months or more, but where final termination of operations has not occurred, shall be covered with a minimum of one foot of soil cover.
- c. After final termination of disposal operations at the site or major part thereof, or upon revocation of a permit, the fill areas shall be covered with at least two feet of suitable compacted earth.

Access and Safety

- a. The facility shall be adequately secured by means of gates, chains, berms, fences, or other security measures approved by the DSWM to prevent unauthorized entry.
- b. An attendant shall be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
- c. The access road to the site shall be of all-weather construction and maintained in good condition.
- d. Dust control measures shall be implemented when necessary.
- e. Signs providing information on dumping procedures, the hours of operation, the permit number, and other pertinent information shall be posted at the site entrance.

- f. Signs shall be posted stating that no MSW, hazardous waste or liquid waste can be received.
- g. Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
- h. The removal of solid waste from the facility is prohibited unless the owner/operator approves and the removal is not performed on the working face.
- i. Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein, except fiber drums containing asbestos.
- j. Open burning of solid waste is prohibited.
- k. The concentration of explosive gases generated at the facility shall not exceed:
  - i. twenty-five percent of the limit for gases in site structures (excluding gas control or recovery system components; and
  - ii. the lower explosive limit for gases at the facility boundary.

#### Erosion and Sedimentation Control

- a. Adequate sedimentation and erosion control measures shall be practiced to prevent silt from leaving the site.
- b. Adequate sedimentation and erosion control measures shall be practiced to prevent excessive on-site erosion.
- c. Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of C&D landfill development.

#### Drainage Control and Water Protection Requirements

- a. Surface water shall be diverted from the operational area.
- b. Surface water shall not be impounded over or in waste.
- c. A separation distance of at least four feet shall be maintained between waste and the ground-water table.
- d. Solid waste shall not be disposed of in water.
- e. Leachate shall be contained on site or properly treated prior to discharge. An NPDES permit may be required prior to discharge of leachate to surface waters.

All pertinent landfill operating personnel will receive training and supervision necessary to properly operate this landfill.

- 7. Ground water quality at this facility is subject to the classification and remedial action provisions referenced in Rule .0503 (2)(d) of 15A NCAC 13B.

8. A closure and post-closure plan must be submitted for approval at least 90 days prior to closure or partial closure of any landfill unit. The plan must include all steps and measures necessary to close and maintain the facility in accordance with all rules in effect at that time. At a minimum, the plan shall address the following:
  - a. Design of a final cover system;
  - b. Construction and maintenance/operation of the final cover system and erosion control structures;
  - c. Surface water, ground water, and explosive gas monitoring.

#### MONITORING AND REPORTING REQUIREMENTS

1. Ground-water monitoring wells and monitoring requirements for the C&D landfill units:
  - a. Monitoring well design and construction shall conform to the specifications outlined in Attachment 2, "North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities".
  - b. A total of six locations as illustrated in the approved plan shall be established to monitor the facility.
  - c. A geologist shall be in the field to supervise well installation. The exact locations, screened intervals, and nesting of the wells shall be established after consultation with the SWS Hydrogeologist at the time of well installation.
  - d. For each monitoring well constructed, a well completion record shall be submitted to DSWM within 30 days upon completion.
  - e. Prior to the acceptance of any waste at the facility, a baseline sampling event shall be completed.
  - f. Sampling equipment, procedures, and parameters shall conform to specifications outlined in the above-referenced guidance document, (Attachment 2), or the current guidelines established by DSWM at the time of sampling.
  - g. In order to determine ground-water flow directions and rates, each monitoring well shall be surveyed, and hydraulic conductivity values and effective porosity values shall be established for the screened intervals for each monitoring well.
  - h. The permittee shall sample the monitoring wells semi-annually or as directed by the SWS Hydrogeologist.
  - i. A readily accessible unobstructed path shall be initially cleared and maintained so that four-wheel drive vehicles may access the monitoring wells at all times.
2. The permittee shall maintain a record of all monitoring events and analytical data. Reports of the analytical data for each water quality monitoring sampling event shall be submitted to DSWM in a timely manner.

3. The permittee shall maintain a record of the amount of solid waste received at the facility, compiled on a monthly basis. Landfill Scales shall be used to weigh the amount of waste received.
4. On or before 01 August 93, and each year thereafter, the permittee shall report the amount of waste received (in tons) at this facility and disposed of in the landfill to the Solid Waste Section and to all counties from which waste was accepted, on forms prescribed by the Section. This report shall include the following information:
  - a. The reporting period shall be for the previous year, beginning 01 July and ending on 30 June;
  - b. The amount of waste received and landfilled in tons, compiled on a monthly basis, according to Condition 6 described above; and
  - c. Documentation that a copy of the report has been forwarded to all counties from which waste was accepted.
5. All records shall be maintained on-site and made available to the SWS upon request.



## **ATTACHMENT 1**

### **List of Documents for the Approved Plan**

1. **Approved Construction Plan for North Mecklenburg Landfill received in Solid Waste Section Office on 9/03/92.**
2. **Hydrogeological Assessment containing approved groundwater monitoring plan submitted by Ecological Services, Inc. and received in Solid Waste Section office on 6/19/92.**
3. **Approved Legal Description of Facility.**

# Document 3 - Approved Legal Description of Facility

## LEGAL DESCRIPTION:

A parcel of land in Huntersville Township, Mecklenburg County, North Carolina and more particularly described as follows:

Beginning at an iron pipe in the common property line with the lands of John F. Locklear and wife Barbara Ann (see Book 3692 at Page 521 and Book 2546 at Page 40 of the Mecklenburg Public Registry); thence S.86-00 21E. 829.19' to an iron pipe; thence S.12-21-36E. 785.28' (passing through an iron pin in the common property line with the lands of Joseph Ray Wright, now or formerly, see Book 4583 at Page 381 of the Mecklenburg Public Registry) and a second iron pin in the common property line with the lands of Glennis M. Stephens, et al., now or formerly, (see Book 3420 at Page 23 of the Mecklenburg Public Registry) to the center of a 30 inch gum tree located in the common property line with the lands of Jess M. Robinson, et al., now or formerly, (see Book 3235 at Page 298 of the Mecklenburg Public Registry); thence S.54-46-57W. 1,258.5' with the aforesaid Robinson boundary to an iron pipe located in the common corner of the aforesaid Robinson property and the lands of Perrin Griffin and wife Dorothy R., now or formerly, (see Book 3759 at Page 447 of the Mecklenburg Public Registry); thence with the Griffin line N.41-37-41W. 1,565.57' to an iron pin located at the common corner of the Griffin lands and the lands of Frankie H. Godley, now or formerly (see Book 3633 at Page 382 of the Mecklenburg Public Registry); thence with the Godley property line one course: (1) N.75-59-28E. 1,095.82' to a new four inch concrete monument; thence a new calculated line N.04-47-42E. 115.51' to the point & place of beginning. Containing 42.77 acres. The above description taken from Book 5992 at Page 372. The property being described herein the

Post-It brand fax transmittal memo 7671 "of page 1"

To	Mr. [illegible]	From	[illegible]
Co	[illegible]	cc	[illegible]
Dept		Phone	
Fax #	704-233-4811	Fax	

9

Post-It brand fax transmittal memo 7671

# of pages 2

To	From
Co	Co
Dept.	Phone #
Fax #	Fax #

## DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES

## DIVISION OF LAND RESOURCES

## LAND QUALITY SECTION

## P E R M I T

for the operation of a mining activity

In accordance with the provisions of G.S. 74-46 through 68,  
"The Mining Act of 1971," Mining Permit Rule 15A NCAC  
5 B, and other applicable laws, rules and regulations

Permission is hereby granted to:

Larry A. Griffin &amp; O. L. Parker

North Mecklenburg Landfill Mine

Mecklenburg County - Permit No. 66-1

for the operation of a

Borrow Pit

which shall provide that the usefulness, productivity and scenic  
values of all lands and waters affected by this mining operation  
will receive the greatest practical degree of protection and  
restoration.

MINING PERMIT EXPIRATION DATE - FEBRUARY 20, 2002

10

# **NORTH MECKLENBURG LANDFILL, INC.**

15300 HOLBROOKS ROAD  
HUNTERSVILLE, NC 28078  
704/875-3367  
704/896-8473

June 15, 1993

Ellis Cayton

This is to advise that O. L. Parker and Larry A. Griffin, Sr. are presently the owners of the North Mecklenburg Landfill, Inc. and the property located at 15300 Holbrooks Road, Huntersville, N. C. 28078.

Sincerely,

Larry A. Griffin  
Vice-President

Fax Number 704/896-0642



# Frank B. Hicks Associates, Inc.

Consulting Engineers • Surveyors • Planners  
 1817 Wedgedale Dr. • Charlotte, NC 28210  
 Telephone: (704) 527-1586 • Fax: (704) 553-1643

JUNE 14, 1993

FAXED TO NO. (919) 733-4810

MEMO TO: MR. ELLIS CAYTON, SOLID WASTE SECTION  
 FROM: FRANK B. HICKS, JR. ENGINEER FOR NORTH  
 MECKLENBURG LANDFILL APPLICATION.

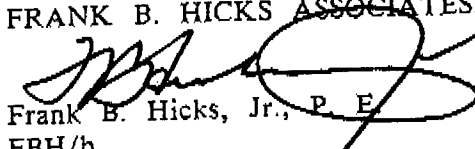
AS REQUESTED ON JUNE 11, 1993, WE ARE FAXING THE  
 FOLLOWING LETTERS OF RESPONSE OR REVIEW RECEIVED  
 FROM VARIOUS STATE AND COUNTY AGENCIES IN THE  
 REVIEW PROCESS FOR THIS APPLICATION:

1. SOIL CONSERVATIONS SERVICES, MR. VRUCE T. WILSON,  
 SEDIMENTATION AND EROSION CONTROL APPROVAL FOR  
 PROJECT. THEY HAVE REVIEW AUTHORITY IN MECKLENBURG  
 COUNTY.
2. DIVISION OF ARCHIVES AND HISTORY, STATE.  
 MR. DAVID BROCK.
- 3,4. N. C. WILDLIFE RESOURCES COMM., HABITAT CONSER-  
 VATION PROGRAM, "NO OBJECTION". THEY HAD ALREADY  
 REVIEWED FOR EARLIER MINING PERMIT.
5. NATURAL HERITAGE PROGRAM, DEHNR, MS. ANN W. KELLY.
6. MECKLENBURG CO. DEPT. OF ENVIRONMENTAL PROTECTION,  
 RAY L. TILLEY, RE: WELL IN PROXIMITY OF LANDFILL  
 AREA.
7. SOLID WASTE PERMIT ISSUED 11-03-88. UNDER WHICH  
 OLDER PORTION OF LANDFILL HAS OPERATED. THIS  
 PERMIT COVERS TOTAL PROPERTIES INCLUDING ONE  
 IN USE.
8. SAME, WITH CERTIFICATION OF PERMIT FROM COUNTY.
9. LETTER TO MR. BILL MILLS, DIV. OF ENVIRONMENTAL  
 ENGINEERING, REQUESTING COMMENTS ON "IMPACT OF  
 EPA STORMWATER ORDINANCE ON THIS PROJECT.  
 I DID NOT RECEIVE A RESPONSE FROM THIS REQUEST!

IF YOU HAVE ANY QUESTIONS OR COMMENTS, PLEASE CALL ME  
 AT THE ABOVE NUMBER.

THANKS,

FRANK B. HICKS ASSOCIATES, INC.

  
 Frank B. Hicks, Jr., P. E.

FBH/b

CC: MR. LARRY GRIFFIN, N. MECKLENBURG LANDFILL

Total number of pages  
 including cover sheet

10

Sent by: 

PLEASE CALL (704) 527-1586 IF TELECOPY TRANSMISSION IS INCOMPLETE OR ILLEGIBLE

R

# Griffin Bros Tire Sales, Inc.

## LETTER OF TRANSMITTAL

DATE:

4/17/93

TO:

Ellis Clayton

FROM:

Larry Griffin

MESSAGE:

This facsimile transmission consists of 3 pages, including this cover page. If this transmission is incomplete, please notify us.

FAX 704/896-0642

19141 Hwy 73 West • Huntersville, NC 28078 • 704/896-8473



## MECKLENBURG COUNTY

Charlotte-Mecklenburg  
Building Standards Department

April 2, 1993

Mr. Ed Humphries  
Town Manager of Huntersville  
P.O. Box 664  
Huntersville, NC 28078

Mrs. Ann Hammond  
Town Planner of Huntersville  
P.O. Box 664  
Huntersville, NC 28078

RE: NORTH MECKLENBURG LANDFILL/15398 HOLBROOKS RD.  
TAX PARCEL #019-191-08

Dear Mr. Humphries and Mrs. Hammond:

I have received a request in a March 3, 1993 letter from Ann Hammond, Town Planner, to begin enforcement action against Griffin-Parker Enterprises, Inc., the tax listed owner of the above referenced location. The requested enforcement action was a result of the issuance of a zoning permit (see attached) on August 10, 1988. You recently raised questions about the validity of the permit when you discovered that the Huntersville zoning maps on file in my office as of August 10, 1988 did not accurately show Huntersville's one mile extra-territorial zoning jurisdiction. At the time the permit was issued, it appeared from the maps on file that the entire demolition landfill was located in the zoning jurisdiction of Mecklenburg County. We have since determined that the portion of the property fronting Holbrooks Road was actually within the one mile extra-territorial zoning jurisdiction of Huntersville at the time the relevant permit was issued.

I have further reviewed the history of this permit as well as the zoning ordinance interpretations made by the Zoning Administrator regarding demolition landfills prior to the time that the permit was issued. Based on my review, I have concluded that the Huntersville portion of the demolition landfill being operated by Griffin-Parker Enterprises, Inc. is a legal non-conforming use.

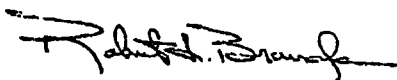
Humphries/Hammond  
April 2, 1993  
Page 2

At the time of the issuance of the permit, the Huntersville Zoning Ordinance contained no specific provisions regulating demolition landfills. Absent specific zoning regulations, demolition landfills were allowed to operate as a use by right in all zoning districts pursuant to the long-standing interpretation of the Zoning Administrator, provided that the operations complied with the North Carolina Solid Waste Management regulations. The Mecklenburg County Zoning Ordinance was amended on June 16, 1986 to specifically regulate demolition landfills in order to modify the Zoning Administrator's interpretation. The Town of Huntersville did not adopt such an amendment until June 1, 1991, which was subsequent to the 1988 permit issued in this case. The permit application in this case was evaluated based upon regulations contained in the Mecklenburg County Zoning Ordinance, and a permit was accordingly issued since the use was determined to be in compliance with the County's ordinance. Had the application been evaluated under the Huntersville Zoning Ordinance, the permit would also have been issued based upon the prior long-standing interpretation of the Zoning Administrator.

To summarize, it is my position that the use of the property within the Mecklenburg County jurisdiction is a lawful, permitted use under the provisions of the Mecklenburg County Zoning Ordinance. Further, it is my position that the use of the property within the Huntersville jurisdiction is a legal non-conforming use. This site should be allowed to continue in operation as permitted so long as the site is not expanded.

Aggrieved parties may appeal this determination to the Huntersville Zoning Board of Adjustment. If you wish for me to notify the affected property owners, please let me know. I can be reached at 336-3567.

Sincerely,



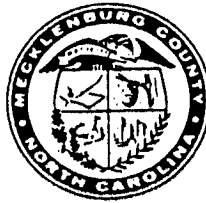
Robert L. Brandon  
Zoning Administrator

psltr\900-d

Attachment

c: Mr. Griffin





MECKLENBURG COUNTY  
Charlotte-Mecklenburg  
Building Standards Department



April 2, 1993

Mr. Ed Humphries  
Town Manager of Huntersville  
P.O. Box 664  
Huntersville, NC 28078

Mrs. Ann Hammond  
Town Planner of Huntersville  
P.O. Box 664  
Huntersville, NC 28078

RE: NORTH MECKLENBURG LANDFILL/15398 HOLBROOKS RD.  
TAX PARCEL #019-191-08

Dear Mr. Humphries and Mrs. Hammond:

I have received a request in a March 3, 1993 letter from Ann Hammond, Town Planner, to begin enforcement action against Griffin-Parker Enterprises, Inc., the tax listed owner of the above referenced location. The requested enforcement action was a result of the issuance of a zoning permit (see attached) on August 10, 1988. You recently raised questions about the validity of the permit when you discovered that the Huntersville zoning maps on file in my office as of August 10, 1988 did not accurately show Huntersville's one mile extra-territorial zoning jurisdiction. At the time the permit was issued, it appeared from the maps on file that the entire demolition landfill was located in the zoning jurisdiction of Mecklenburg County. We have since determined that the portion of the property fronting Holbrooks Road was actually within the one mile extra-territorial zoning jurisdiction of Huntersville at the time the relevant permit was issued.

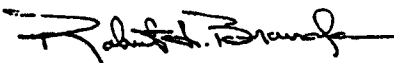
I have further reviewed the history of this permit as well as the zoning ordinance interpretations made by the Zoning Administrator regarding demolition landfills prior to the time that the permit was issued. Based on my review, I have concluded that the Huntersville portion of the demolition landfill being operated by Griffin-Parker Enterprises, Inc. is a legal non-conforming use.

At the time of the issuance of the permit, the Huntersville Zoning Ordinance contained no specific provisions regulating demolition landfills. Absent specific zoning regulations, demolition landfills were allowed to operate as a use by right in all zoning districts pursuant to the long-standing interpretation of the Zoning Administrator, provided that the operations complied with the North Carolina Solid Waste Management regulations. The Mecklenburg County Zoning Ordinance was amended on June 16, 1986 to specifically regulate demolition landfills in order to modify the Zoning Administrator's interpretation. The Town of Huntersville did not adopt such an amendment until June 1, 1991, which was subsequent to the 1988 permit issued in this case. The permit application in this case was evaluated based upon regulations contained in the Mecklenburg County Zoning Ordinance, and a permit was accordingly issued since the use was determined to be in compliance with the County's ordinance. Had the application been evaluated under the Huntersville Zoning Ordinance, the permit would also have been issued based upon the prior long-standing interpretation of the Zoning Administrator.

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Aggrieved parties may appeal this determination to the Huntersville Zoning Board of Adjustment. If you wish for me to notify the affected property owners, please let me know. I can be reached at 336-3567.

Sincerely,



Robert L. Brandon  
Zoning Administrator

ps\ltr\900-d

Attachment

c: Mr. Griffin

# TOWN OF HUNTERSVILLE

P.O. BOX 664

PHONE 875-6541

HUNTERSVILLE, NORTH CAROLINA 28078



March 3, 1993

Ellis Cayton, P.E.  
Solid Waste Section  
Division of Solid Waste Management  
N.C. Department of Environment, Health, and Natural Resources  
PO Box 27687  
Raleigh, NC 27611-7687

RE: North Mecklenburg Landfill Application for Change in Waste Type.

Dear Mr. Cayton:

The Town of Huntersville has been asked to provide local government approval and local zoning approval for change in waste type at North Mecklenburg Landfill.

In attempting to respond to these requests, we reviewed the zoning compliance history of the landfill site and discovered that a permitting error occurred in 1988 - an occurrence heretofore undiscovered by any of the agencies or private parties with interest in the site. In summary, a zoning compliance permit was issued on July 7, 1988 by Mecklenburg County signifying that the landfill was a use permitted by Mecklenburg County zoning regulations in the county RU (rural) zoning district. This permit has been found, however, to be invalid as to a 29.7 acre portion of the site which became subject to Town of Huntersville zoning authority on May 3, 1988. Because any zoning compliance permit issued for this 29.7 acres on July 7, 1988 would have required adherence to Huntersville zoning regulations, and because landfilling was not a principal use permitted by right in the applicable Huntersville zoning district at the time of permit issuance, the zoning compliance permit is invalid. Therefore the 29.7 acres of North Mecklenburg Landfill within Huntersville's zoning jurisdiction has been found to be an illegal non-conforming use as to zoning. It should be noted that the subject 29.7 acres retains residential zoning and includes all road frontage providing access to the site.

Subsequent to this finding, the landfill owner applied to the Huntersville Board of Commissioners for a change in zoning to bring the landfill into compliance with local regulations. On March 2, 1993 this rezoning request was denied. Consequently this 29.7 acre portion of the landfill remains an illegal non-conforming use.

The Town of Huntersville is therefore unable to provide local zoning approval or local government approval for change in waste type.

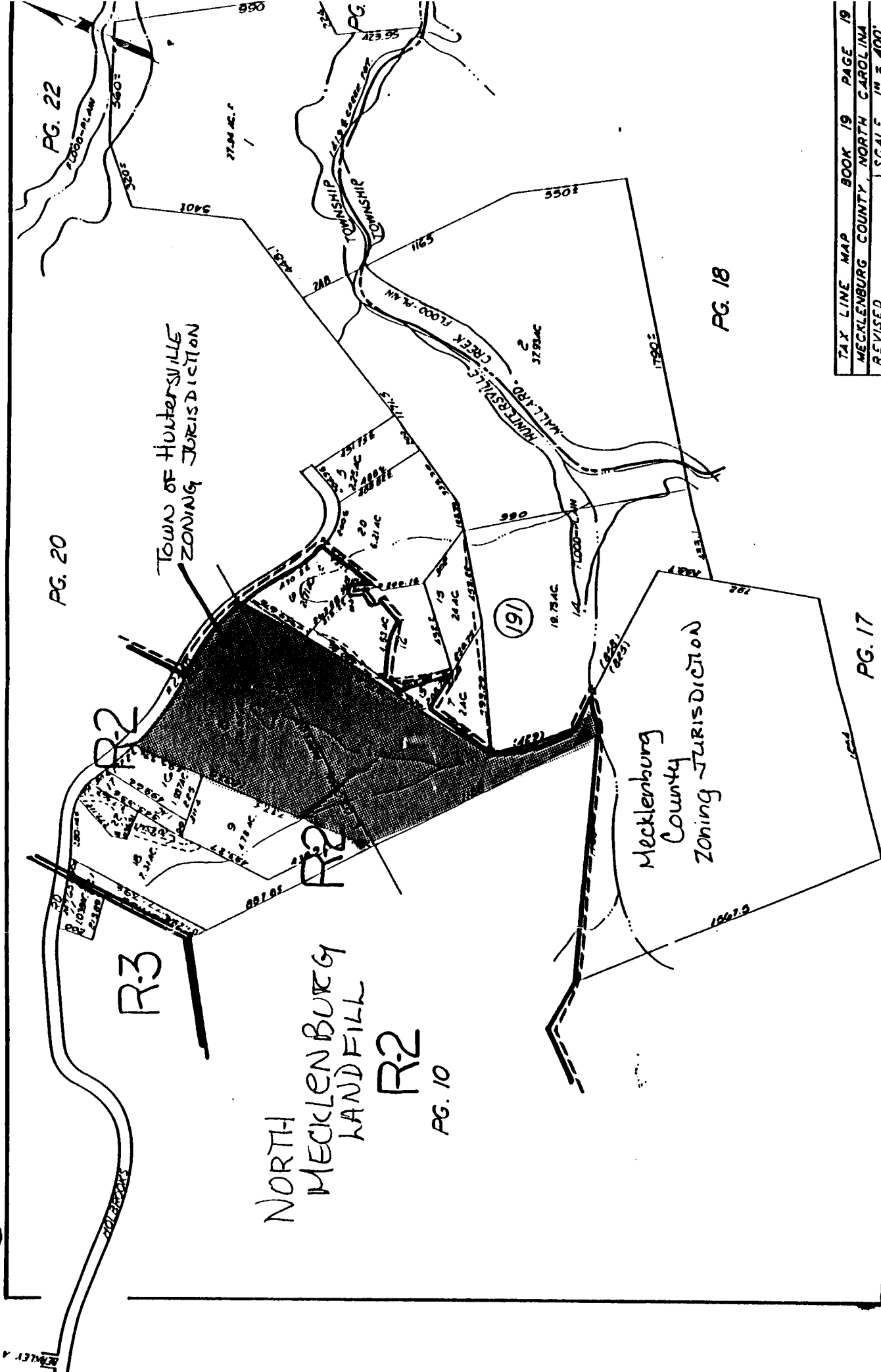
If you have any questions or need additional information, please let me know.

Very truly yours,

A handwritten signature in cursive script that reads "Ann Hammond".

Ann Hammond  
Town Planner

cc: Edward Humphries, Town Manager  
Larry Griffin, North Mecklenburg Landfill





**ENVIRONMENTAL MANAGEMENT DIVISION**  
**SOLID & HAZARDOUS WASTE SECTION**

Page 1 of 1**ACTIVITY REPORT****TYPE OF ACTIVITY**

<input checked="" type="checkbox"/> Field Report	<input type="checkbox"/> Consultation
<input type="checkbox"/> Inspection	<input type="checkbox"/> Office Report
<input type="checkbox"/> Phone Call	<input type="checkbox"/> Ed. Presentation
<input type="checkbox"/> Other _____	

Name (Facility/Indv.): Robert Counsel Phone: \_\_\_\_\_Address: 11743 Vanita End Lane City: Huntsville Zip: \_\_\_\_\_**REPORT**

*Janell Wooten*  
*John Jackson*

**EST.  
TIME**12/8/93Called Mike Mullis Well DrillerKenapolis N.C.Talked with Edward Mullis, Mike Mullis son,

The water well on the Counsel property was drilled  
in the first 15 days of August 1993. It was drilled for  
Alan Brooks the builder. Mr. Mullis noted the grading  
and called it to Alan Brooks attention. Brooks to Mr. Mullis  
that the grading was in a landfill. Edward Mullis responded  
that maybe we should contact the Health Dept to make sure this  
was a good location. He Mullis was told to drill the well.

Drilling the well took app. 8 days. The casing was  
pulled 3 times in an effort to get it installed correctly.

See the attached map.

I looked at the well placed and it shows [on 1/19/93]  
the 8 is laying on its side

Environmentalist: \_\_\_\_\_

*Janell Wooten*Date: 12/8/93

Reviewed by: \_\_\_\_\_

*Dale C. Baker*

Supervisor

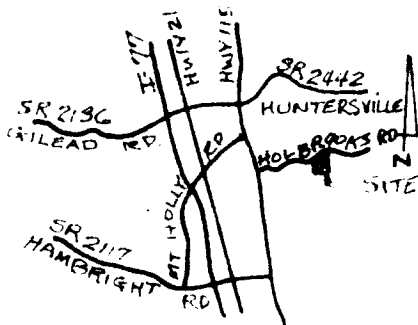
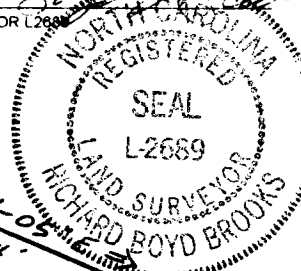
Date: 12/8/93

THIS IS TO CERTIFY THAT ON THE 16<sup>TH</sup> DAY OF OCTOBER 1993 I SURVEYED THE PROPERTY SHOWN ON THIS PLAT, AND THAT THE PROPERTY LINES, WALLS AND BUILDINGS ARE AS SHOWN HEREON THAT THE BUILDINGS LOCATED ON SAID LOT DO NOT ENCROACH OR PROJECT ON ADJACENT STREETS OR PROPERTY AND THAT NO ADJACENT BUILDINGS OR WALLS ENCROACH OR PROJECT ON SAID PREMISES

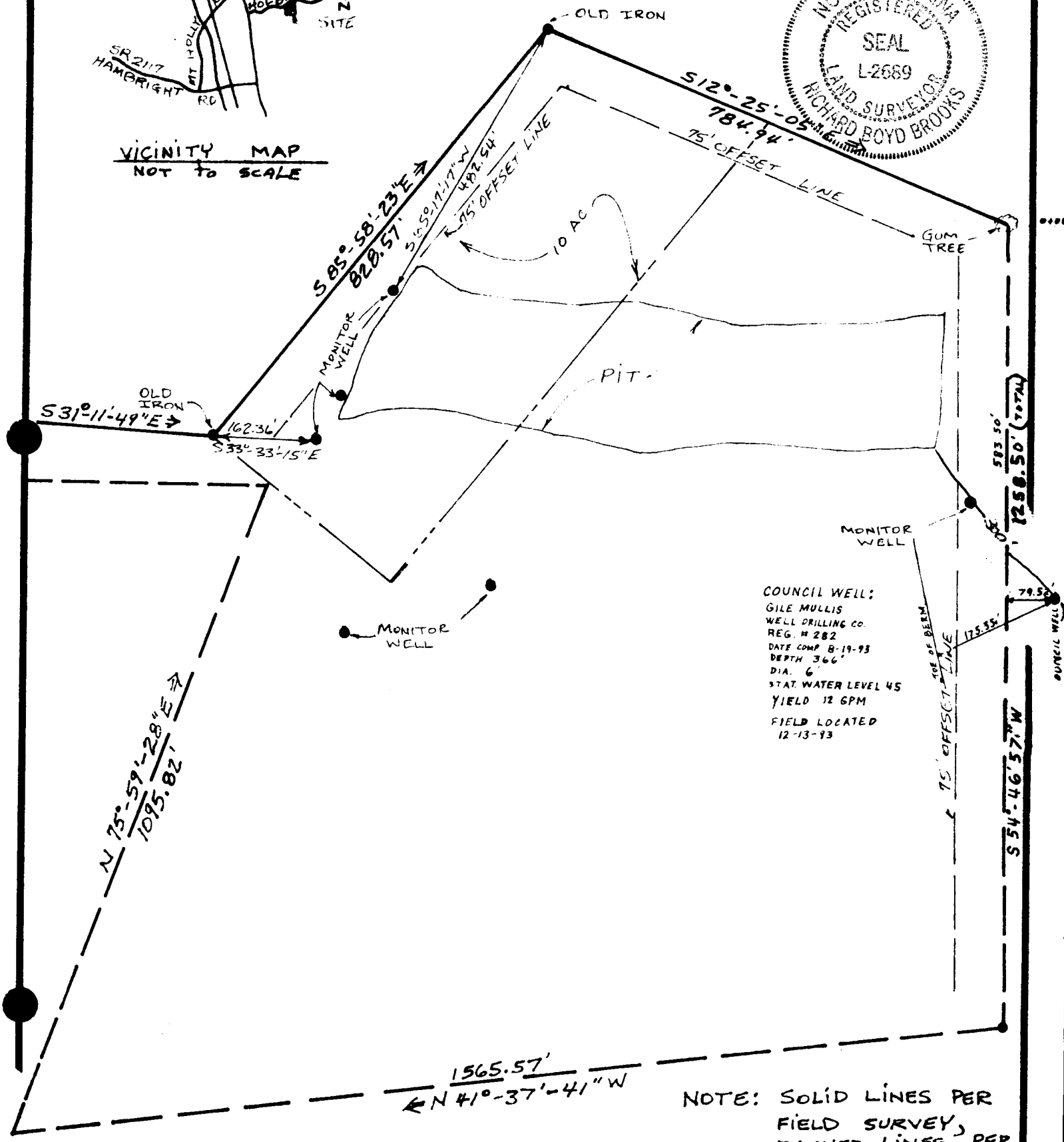
RICHARD BOYD BROOKS

1200 JENKINS DR  
CHARLOTTE, NC 28212  
704-568-1719

SIGNED *Richard Boyd Brooks*  
N.C. REGISTERED SURVEYOR L2689



VICINITY MAP  
NOT TO SCALE



COUNCIL WELL:  
GILE MULLIS  
WELL DRILLING CO.  
REG. # 282  
DATE COMP 8-19-93  
DEPTH 366'  
DIA. 6"  
STAT. WATER LEVEL 45  
YIELD 12 GPM  
FIELD LOCATED  
12-13-93

NOTE: SOLID LINES PER  
FIELD SURVEY,  
DASHED LINES PER  
DEED.

MAP  
OF  
WELL LOCATION & PIT LOCATION  
HUNTERSVILLE, MECKLENBURG COUNTY, N.C.  
PROPERTY OF  
LARRY GRIFFIN

SCALE 1" = 200' DEED RECORDED 5992-0372 MAP RECORDED  
FIELD BOOK JOB NO. 92429 THIS PLAT DOES NOT CONFORM TO GS47-30

\*SUBJECT TO UNDERGROUND UTILITIES, AREA BY D.M.D. METHOD OF AREA COMPUTATION, UPDATED  
• = OLD IRON (E.I.P.) O = NEW IRON (N.I.P.) NPS = NO POINT SET

INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM  
APPLICATION FOR SERVICES

03/11/93 #200

CR#11

Mecklenburg County Health Dept.  
Environmental Health Division  
c/o Nat. Marshall Ctr., Suite 211  
700 N. Tryon St.  
Charlotte, NC 28202  
(704)336-5102

PERSON FILING APPLICATION:

NAME: COUNCIL ROBERT T  
(last) (first) (mi)  
ADDRESS: 2116 EASTWAY DR PHONE: (704) 537-9001  
CITY: CHARLOTTE STATE: NC ZIPCODE: 28205

Date: 3/11/93

PROPERTY INFORMATION (FROM ENGINEERING FORM):

TAX/PARCEL NUMBER: 019-171-1480  
STREET ADDRESS: 11743 TRAILS END RD

PROPERTY OWNER:

NAME: COUNCIL ROBERT T  
(last) (first) (mi)  
ADDRESS: 2116 EASTWAY DR PHONE: (704) 537-9001  
CITY: CHARLOTTE STATE: NC ZIPCODE: 28205

ZONING:

SUBDIVISION OR MOBILE HOME PARK NAME:

Township (check one):

- ☐ 0 Mecklenburg County ☐ 2 Davidson ☐ 4 Pineville ☒ 6 Huntersville  
☐ 1 Charlotte ☐ 3 Cornelius ☐ 5 Matthews ☐ 7 Mint Hill

TYPE APPLICATION (check one):

- ☐ SOIL TEST - INDIVIDUAL LOT (D)  
☒ NEW CONSTRUCTION ON VACANT LOT - 4 BEDROOMS OR LESS (N)  
☐ EXCHANGE MOBILE HOME - SAME # BEDROOMS (Y)  
☐ ADDITION - INCREASE ROOMS/OCCUPANCY/MOBILE HOME SIZE (A or M)  
☐ COMMERCIAL OR INDUSTRIAL (N)  
☐ SOIL TEST DEVELOPMENT (P)  
☐ ADDITION - GARAGE OR RENOVATION/NO MAJOR CHANGES (X)  
☐ MODIFIED /ALTERNATIVE/ OR RESIDENCE > 4 BEDROOMS (Z)  
☐ REPAIR TO SYSTEM (R)

RESIDENTIAL PROPERTY (Type Building, check one):

- ☐ SINGLE MOBILE HOME (S) ☒ HOUSE (H) ☐ MULTIPLE FAMILY (U)  
☐ DOUBLE WIDE (D) ☐ MODULAR HOME (M) ☐ OTHER (O)

KITCHEN BEDROOMS: 4 NUMBER OCCUPANTS: 4

SYSTEM CLASSIFICATION: CONVENTIONAL

COMMERCIAL/INDUSTRIAL PROPERTY:

Business                      # Employees            Per Shift             
Industrial Wastes (Y/N)                       
Underground Storage Tanks On Property (Y/N)            Type           

WATER SUPPLY (check one):

- ☐ Community (C) ☐ Shared Well (S)  
☐ Municipal (M) ☐ Other 'spring' (O)  
☒ Private Well (P)

FUTURE ADDITIONS - ALL PLANNED ADDITIONS MUST BE ENTERED (check all that apply):

- ☒ Swimming Pool ☒ Jacuzzi ☐ Stable/Barn ☐ Workshop ☐ None  
☐ Garage ☐ Storage Building ☒ Deck/Patio ☐ Bedrooms ☐ Other

The undersigned, owner, or legal agent for the owner, of the property described above as the "JOB LOCATION" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the MECKLENBURG COUNTY HEALTH DEPARTMENT to enter onto the property for the purpose of processing this request.

Signed: [Signature]

Date: 3/11/93

NOTICE:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws And Rules For Sanitary Sewage Collection, Treatment And Disposal in effect at the time of issuance of the permit and is subject to the following provisions:

...No work shall be conducted on the septic tank system until an installation, Construction, Alteration and/or Repair approval is granted by this Department.

...This permit is not transferable.

- ☐ IMPROVEMENT PERMIT - VALID 60 MONTHS FROM ISSUANCE  
☐ MOBILE HOME EXCHANGE APPROVAL - VALID 6 MONTHS FROM ISSUANCE  
☐ ADDITION/RENOVATION APPROVAL - VALID 1 YEAR FROM ISSUANCE

Phil A Walker 3/16/93  
Environmentalist

[Signature] 3/11/93  
Director or Authorized Section Head



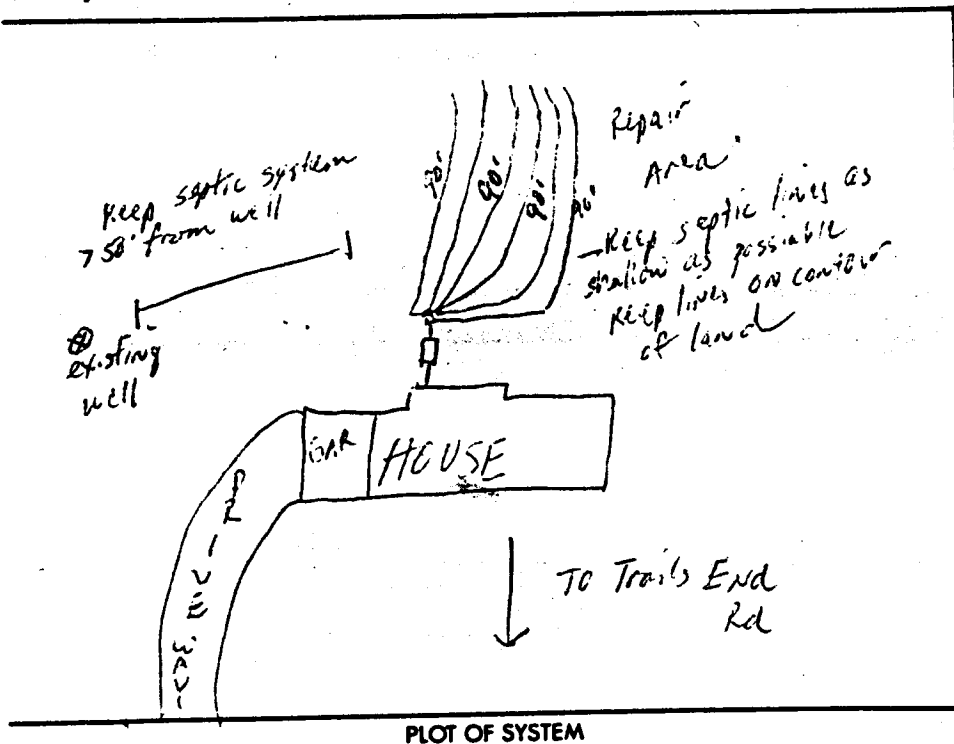
# INSTALLATION, CONSTRUCTION, ALTERATION, AND/OR REPAIR PERMIT



HEALTH DEPARTMENT  
ENVIRONMENTAL HEALTH DIVISION  
1200 BLYTHE BOULEVARD  
CHARLOTTE, NC 28203  
PHONE (704) 376-4603

FILE: 4799A DATE: 10/5/93  
TC: 019 171 14 PD ☒  
SERIAL No 15178

Permission is hereby given to ☒ Install or Construct, ☐ Alter or Repair the individual septic tank wastewater treatment system with subsurface, soil absorption, effluent discharge as specified herein at the described location. This permit is granted based upon the information supplied in the application dated 3/11/93. All work shall be completed on or before 11/5/93, after which date this permit shall be null and void. The system shall meet all of the construction requirements of 10 NCAC 10A .1900 which are in effect on the date of the granting of this permit. A Certificate of Completion or an Operation Permit must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now or hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.



Liquid Capacity of Septic Tank 1500 gallons  
Liquid Capacity of Dosing Tank - gallons  
Tank Construction PCC  
Absorption and/or Nitrification Lines:  
Trench Width 3 feet  
Total Line Length 535' feet  
Number of Lines 6 (90')  
Depth of Stone 12 inches  
Distance from House 5 feet  
Distance from Property Line 10 feet  
Distance from Well > 50 feet

NAME OF OWNER Robert Council  
LOCATION OF PROPERTY 11743 Trails End Rd

Comments: 1500 ST, 6 lines x 90' long x 3' wd x 12' stone. Keep septic system as shallow as possible. Keep septic system > 50' from well. Keep lines on center of land

Richard S. Donald Division or Section Head  
Theresa A. Walker Environmentalist

\* If this permit is for the installation or construction of a new system, it must be signed by the division or a section head of the Mecklenburg County Health Department in order to be valid. Only the signature of the Environmentalist is required where an existing system is being altered or repaired.